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## MEDICINE AT THE CROSSROADS

HARVEY CUSHING, M.D.

BOSTON

In April of 1918, a Canadian casualty clearing station had been newly set up, in the emergency of that critical time, at a hamlet called Pernes somewhere near Bethune in Flanders. The surgical "teams," as they were called, hurriedly assembled from where they could be spared, were working on day and night shifts like factory hands to keep abreast of the raw material fed in to them. We dealt with wounds—not the man. For him we had no time. Some far away government took that responsibility and is still paying for it. In the midst of this, on an afternoon while in the course of one more gruesome task, I was suddenly told by a much annoyed Commanding Officer that orders had been received from the A E F for me to report forthwith at a place called Langres.

Anything may happen in time of war, and one asks not why. Langres, as it turned out, was a perfectly safe hill-town half way across France between the headwaters of the Marne and the Meuse. And not knowing whether I was to be demoted for some breach of discipline or made commander-in-chief, with ill-concealed agitation I presented myself there in due course before the C O of what proved to be a training school for Army medical officers. I was informed I had arrived just in time to give the noon lecture on battle injuries of the head.

Of that ill prepared and futile lecture—after which I was dismissed—the less said the better. I was picked up by a sympathetic friend permanently attached in Langres—a first lieutenant, considerably my senior in years, who in normal times was a professional colleague. He offered to take me to lunch at his mess before my departure. On the way there—and I at last approach the point of this recital—we passed, in a narrow street, the open window of a shop in which, concentrated on his work, there sat before a bench an oldish man in shirt sleeves and a leather apron making jack-knives. He wasn't making parts of knives but the whole knife—steel blades, bone handle, and all, and some of them, finished, were hanging in the window alongside a much faded blue tunic with a wound stripe on the sleeve, which told its own story.

Were his knives for sale? Yes, since times were hard, only six francs for the better ones, and we could step in and have a look if we desired. A pocket knife may sometimes be useful to cut red tape, and when I had made a selection he examined the knife carefully, put it back and took another which he said was a better

one. If I didn't lose it, it would last all my days, and would I notice the spring—no breaking of fingernails with a carefully made and tested knife like this—a masterpiece if he said so as shouldn't. So admiring was he of his handiwork I began to think he would not bring himself to part with it, but his decision to do so was suddenly stiffened by the entry from a back dwelling-room of his wife and two children—future jack-knife makers in all probability.

Not long after this, I somehow or other happened to sit in at an informal discussion between two French officers and two American efficiency experts, members of an advisory commission that had been sent to France. Plainly the reason the Allies had not already won the war was their want of industrial organization, their inability, for lack of proper machinery and modern methods, to turn their raw materials rapidly enough into the finished product and to give it wide distribution. The only way to do this effectively was the way we made motor cars in America, each workman contributing his small part, at high speed, in short hours, for good wages.

After much more in similar vein, the senior French officer finally said "This may all be true, gentlemen, but it would be almost better for us to lose the war. The French artisan works because he likes to, often at his home, can turn his hand to many things, is frugal and content with small earnings, can usually make, pretty much with his own tools and hands, some finished product which he can sell. So even in trying times like these, he gets independently to work as his own employer, somehow supports himself, and merely asks to be left alone. Were he forced into being a piece-work specialist he would lose his resourcefulness and independence of action. Should this happen on a large scale, discontent would surely follow and our social order fall to the ground."

That night I fell asleep thinking of the Langres knife-maker. Every foot-soldier should have a jack-knife—not just an occasional officer. There must be a more even distribution of bigger and better and sharper knives. All independent knife-makers in the emergency are congregated in a factory where some do the blades, some the handles, some the assembling of parts, the labeling and packing, the advertising, the selling, the foreign distribution—everyone a specialist in his own line. It becomes a great business, a marvel of efficiency. Jack-knives are quoted on the stock market and prices soar. New machinery is installed whereby synthetic knives can be turned out by the million almost without aid of human hand—and everyone knows the awakening. A glut on the market, a closed factory, all knife-makers out of work, and even those few who still remember how to fashion a good, complete jack-knife from the raw materials no longer able to sell them, join

the others, march on Paris behind the red flag of protest, and demand from the government either a dole or a new sorting of the cards. Whereupon a group of well intentioned philanthropists, sociologists, economists and lawyers, together with two former knife-makers, one now a specialist in corkscrews, the other in synthetic-bone handles, are appointed to study in all its aspects the relation of knife-making to the common weal.

This, after all, is not much of a story—partly a dream at that—and perhaps only by a stretch has it anything to do with present crux in which the medical profession finds itself, overmanned, overspecialized (behold this Congress!), like other necessities of life poorly distributed, an expensive luxury for those of modest means and the subject of investigation by a commission which threatens us with socialization unless we promptly do something to alter our spots, to cast off our long-conditioned reflexes, and put ourselves on a modern chain-store business basis. This for the next twenty-five years at least, and that's as far ahead as there is need to plan, will serve to make everyone—including the doctor—happy, healthy and wise.

A lawyer on the commission goes so far as to use the ugly word "coercion" and when a friend, familiar with jurisprudence, was asked just what that meant, he said "government by force." And to the question whether it would be possible similarly to "coerce" the legal profession into caring for persons of modest means on the same parity as the well-to-do, he replied "No, the lawyers are too smart and there is too large a percentage of them in our legislative bodies ever to bring such a thing about."

A recent leader of public opinion openly states that most of those at present dealing with the sick—meaning more specifically the doctor—have their faces turned toward the past. If history but repeats itself, where else but from the past *can* we learn anything? We certainly can draw little comfort and few admirable lessons from the late present. Nor would this seem to be the time to fly to evils we know not of, but rather to stick firmly to what has proved in the long run the great stabilizer—every honest man with faith, hope and a stout heart going about his own business, with swift punishment for dishonesty and crime. And lest we forget, let us for a moment in reality *turn* our faces to the past.

"The prevalence of crime he assigned to want of employment among the poor, to the idleness and the luxury of the well-to-do, to the recklessness with which the rulers engaged in war, and to the readiness with which merchants were converting arable land into pasture, villages were laid waste and the opportunity of labor was greatly diminished in order to fill the coffers of capitalists. Discharged soldiers troops of dismissed retainers from the households of the gentry, who, after a life of idleness, were thrown on their own resources ploughmen and peasants, whose services were no longer required by the sheep-farmers, perilously swelled the ranks of the unemployed and made thieving the only means of livelihood for thousands of the population. A more even distribution of wealth was essential to the country's salvation. To this end were necessary the enjoyment of the blessings of peace, restrictions on the cupidity of the capitalist improved education of the humbler classes, and the encouragement of new industries."

While this might have been written of many times and places since then, it in effect was what the old sailor Raphael Hythloday had to say concerning the status of England in the sixteenth century. Things were quite different, he said, on the island of Utopia, whence he

had recently returned. There everyone lived in complete social happiness and brotherly love, disdaining money, they wanted for nothing, not even hospital care, and could worship as they chose.

Needless to say, when the crisis came in his own affairs, the author of this more often quoted than read allegory, with the inconsistency that affects mankind, failed to live up to his expressed ideals, attempted to coerce others to his own theological beliefs, and lost his head in the process. Social reformers, no less well intentioned and lovable characters than was Sir Thomas More, sometimes lose their heads though not always in just that way. More's great friend Erasmus wrote a famous skit in praise of folly, and More doubtless knew well enough that "the greatest folly of which a man is capable is to sit down with slate and pencil to plan out a new social world," though we waited almost four hundred years for a student of society to say just that.

Heaven knows there are plenty of things the commoner, including most doctors, would like to see corrected and the sooner the better—dishonesty among those entrusted with other people's savings, less interest in legal procedure and more justice among the lawyers, as examples—and the doctor wonders why, just at this time, when in spite of widespread distress and anxiety the health of the people as a whole is better than ever, he should be particularly singled out and told if he doesn't distribute himself more evenly, stop specializing and charge less, he'll be coerced into doing so. He thinks this highly peculiar, for hasn't he always striven with ever increasing success to eliminate one after another the diseases whose particular care provides his bread and butter? And has he not shared with the priest, from the beginning of the record, in giving a large part of his time to the indigent poor in whom business, finance and the law may be theoretically interested without showing it in so direct and practical a way?

Lay reformers speak lightly of his code of ethics as something long since outworn, but so far it has prevented him, for one thing, from capitalizing for his own benefit his inventions and therapeutic discoveries. If Jenner and Lister had been trained in the point of view of modern business efficiency, instead of being just a plain, improvident country doctor and a young hospital surgeon, whose only desire was to help others, and to stand well in the esteem of their professional fellows, what then? For the discovery of the practical application of ether anesthesia, Medicine has no corresponding hero because someone, having unethically taken out a patent, proposed to sell it to the government for a large sum and very nearly succeeded in doing so—all of which is thoroughly ventilated in five hundred and eighty-two printed pages of testimony before a select committee of the United States Senate to their great waste of time. For what could be their understanding of an ancient profession's precepts in regard to what its votaries may and may not properly do?

It is preposterous, writes the efficiency expert, to say that a man, even a doctor, is not entitled to what he can make out of his inventions. The medical man of the future will pay more attention to prevention than to cure, says the young DPH to his hostess as he accepts his second cocktail. The social reformer, stopping at the corner store for his favorite brand of cigarets, purchases a sixty-cent bottle of the latest "peccatorial" which the clerk says will be good for his (easily preventable) chronic cough, and, dear me, he's almost

forgotten his promise to fetch home Aunt Maria's weekly bottle of Lydia E's Restorer at \$1 25, for though it isn't so restoring as when it contained forty per cent, she still takes it after meals

Knowing their frailties, the doctor doesn't think overmuch of his fellowkind while doing what he can to prevent, alleviate or cure their ills. He at least doesn't overrate them and treats like any one else the chiropractor and the science healer (secretly) and the veteran who draws a total disability allowance yet is on the police force, and even the prosperous-looking uplifter of society, knowing that each of them will look surprised when asked to pay for his services and that, so far as concerns them, he'll soon join the ranks of others never thought of

It is not with such as these that the doctor shows his best side. He feels far more at home with the ordinary, self-respecting people of modest means who don't expect, on this earth, to find green pastures provided for them with ten-cent cigars, a two-car garage, and a fish-fry in every dinner pail. They frankly say just what their circumstances are and what they can pay and when. For them, too, he can do no more than his best and only wishes it could be better, and cuts their bill in half or cancels it altogether. They never forget him but send him each year a note on the anniversary of the operation and, like enough, a pair of carpet slippers for Christmas which he can't use for he's in his boots till bedtime. But this he doesn't admit when making his acknowledgment, for he cherishes their remembrance—even their gratitude though pretending not to like it. And as a matter of experience, those who can least afford it are the ones among his patients most eager to make a prompt cash payment to him even though a large part of every hard-earned dollar goes to various unseen persons whom they are making rich, and to whom they feel obligated in no comparable way.

In his common sense discussion of the ever shifting manners, mores and morals of society before the undergraduates at Yale a generation ago, William Graham Sumner had much to say about a particular man who is never thought of and on whom the burden always falls. In the complexity and rivalry of human interests, he is the one who in the end always has to pay—even for the efforts of social reformers to make the world over.

"For once let us look up and consider his case, for the characteristic of all social doctors is that they fix their minds on some man or group of men whose circumstance appeals to the sympathies and imagination, and they plan remedies addressed to the particular trouble. They do not understand that all the parts of society hold together and that forces which are set in action act and react throughout the whole organism until an equilibrium is produced by a readjustment of all interests and rights. They therefore ignore entirely the source from which they must draw all the energy which they employ in their remedies, and they ignore all the effects on other members of society than the ones they have in view. They are always under the dominion of the superstition of government and forgetting that a government produces nothing at all they leave out of sight the first fact to be remembered in all social discussion—that the state cannot get a cent for any man without taking it from some other man, and this latter must be a man who has produced and saved it."

Now in the issue before us, if I may venture to paraphrase Sumner, everyone's sympathy, including that of reformer *A* and his friend *B* who stands financially behind him, lies with the self-respecting person *X* of modest income, who finds it difficult to meet the expense

of medical care in case of sudden illness or accident from some unpredictable and unpreventable cause. For the sake of *X*, this particular evil must be remedied by a statute which will determine, not what *A* and *B* might do for *X* themselves, for they would need no legislation for that, but what an intermediary *C* (in this instance the doctor) must do for him.

Now *X*, who has not yet been consulted, will be likely to say when he gets wind of it that, after all, he doubts whether he will ever need doctor *C*, even should he prefer him, when the time comes, to another medical man of his acquaintance. What is more, he is already burdened with more insurance and taxes than he can afford. He is already paying to support the local, state and an expanding federal board of health, for prisons to accommodate the rapidly increasing number of criminals, for institutions to house the even more rapidly increasing insane and feeble-minded, for hospitals to care for that organized group calling themselves "veterans," who may not increase in number but do in their demands, which amounts to the same thing.

So he and his neighbors conclude, in accordance with Sumner's social philosophy, that they as usual will again foot the bills, just as their common kind originally paid, little by little, all that now fills the coffers of *A*'s philanthropic friend *B* of the foundation which is backing the proposal. And from all one can learn, so far as the public purse is concerned, the old adage which likens it to holy water still holds true—those who have access to it help themselves.

Unfortunately, *X* is not always so sensible a fellow as to make a family friend, confidant and adviser of one or the other rival practitioners in his small town. And when the *X*'s gravitate to the city and shift from place to place when there, you and I know they are more apt to choose an abode convenient to a cinema and a drug-store than to a doctor. When a member of the family takes ill and fails to respond to the usual proprietary remedy, a neighbor is consulted who turns out to be a Christian Scientist, or another who suggests the particular chiropractor who for five dollars cured Uncle John of the flu at one sitting, or a third who has just seen in the morning paper the name of a perfectly swell professor who has just done something wonderful at the New Medical Center to a woman who swallowed her false teeth.

Acting on this suggestion, he is called on the telephone and asked if he won't please come immediately to Number so-and-so in Harlem to see a sick woman just in his line of work. No, they have no family doctor, so he asks if there is not a doctor in the neighborhood they can more conveniently and promptly call in. "Yes, there is a Dr. Jones just around the corner but we don't know him as we've only lived here nine months and never needed a doctor before, and anyhow he is only a house-to-house doctor and the case is so urgent we need a specialist at once and we can't afford to go to the hospital it's so expensive."

Our urban populations are largely composed of people of just this sort, and what's to be done to save them against themselves and keep them from "shopping around" as it's called? In this particular emergency one can't stop to theorize about systems of voluntary versus compulsory insurance, the chief burden of which would fall as usual on the average provident man of good habits, the matter must be attended to at once.

Ten chances to one there is nothing seriously wrong with this panicky woman, but the single chance can't be taken and the "swell professor" before he hangs up,

if he is the kind of man I know him to be, tells the person at the other end of the line he regrets he can't come himself but he will shortly have someone there to see what can be done. He has Dr. Jones's office called up to say there is a sick woman nearby and will he please see her when he conveniently can and say he comes at the "professor's" (God save the mark!) special request, and will he then take the case in charge or send her to a hospital as he thinks best.

Here the chances are also ten to one that the local doctor will prove capable and efficient, will promptly grasp the situation, know how to deal with it, and gain the confidence of the family and their friends. "Such a nice doctor, so scientific, and to think we've never known about him before! Why, he cured Mother's trouble in one visit and only charged two dollars though he's a great friend of the professor at the Medical Center whose name was in the paper." This, and a definite understanding that his back bills are to be paid before yours and mine, is the correct way to deal with the problem of the general practitioner, and it is more often followed than people believe.

But who is this house-to-house doctor so suddenly sprung upon us? He has supposedly gone out of business, pinched on one side by the public health officer and periodic life-extension examiners, and on the other side by what are called the scientific doctors including ourselves, the specialists in our respective hospitals. He has long been so far forgotten he should by this time be an extinct species. Indeed, it is authoritatively said that the automobile and the associated highways together with the present "set-up" of society have driven out the unmethodical, silk-hatted, bewhiskered, lovable and friendly general practitioner.

This scornful picture of the practising doctor shows lack of knowledge, besides being somewhat cruel. Whiskers and a silk hat don't make the man. Fashion makes the whiskers, and the boys in blue were as good soldiers for all their beards and Bull Durham as were those in khaki with their clean faces and fags—too many at that. Gillette and Henry Ford and the Dukes may through advertising and salesmanship change our appearance, our manner of getting about, and incite us to bad habits—incidentally with great profit to themselves. But even though his whiskers have gone with his tall hat, if he ever had one, and he comes in a cheap motor car instead of behind a horse, and nervously smokes too many cigarets, the general practitioner or family doctor is still with us and plays the same important role he always has.

For nine tenths of what he is called upon to do "the operating table and the microscope and the roentgen ray and the trained nurse and the mechanotherapeutist" are wholly unnecessary; and when they are needed he usually knows where to get at them. All he asks from his school is that, under teachers who know from experience rather than theory what his life work is to be, he may get the sort of well rounded training which will enable him to keep abreast of the changing times while in city or country, with dignity and propriety, he engages in the quiet art of healing.

Such are the men who represent the backbone of our profession and for each of them there are countless devoted patients and for each patient whole families whose voice in our discussions has not as yet been heard. And were it heard, it would be, in effect, what it always has been. "So long as I am well, I forget the doctor—and his bills which he often neglects to render, but he is always there in case of need except during a

vacation, something I notice he is more apt to prescribe for others than take himself."

It is to the self-sacrificing spirit of the sagacious practising doctor, not to the likes of us in this, that or the other line of special work, or the medical scientist, or the public health official that from the earliest times tribute has been paid.

Honour the physician because of the need thou hast of him, for the most High hath created him and in the sight of great men he shall be praised. All healing is from God. He hath created medicines out of the earth, whose virtue is come to the knowledge of men who shall thereby cure and allay pain.

So, in effect in the Book of Wisdom did the son of Sirach called Ecclesiasticus admonish the average man and potential patient, who differs no whit today from some nineteen centuries ago. He is no less gullible and superstitious, no less negligent and sinful, no less certain from time to time to betake himself to a physician, from whom he expects, and usually gets, not only understanding and sympathy but an honest opinion—accompanied by emphatic directions which it is to be hoped he will follow longer than he does his own good resolutions made each New Year's eve.

A remark, easily traceable to its source, has been often repeated to the effect that the family doctor will come to be replaced and crowded out by the local health officer. Preventive measures against the spread of disease are no new thing. The very word quarantine and its mystic forty days and forty nights is lost in the darkness of oriental history long before Hygiea, the daughter of Aesculapius, was worshiped as a health-protecting divinity. Even today when we are said to be more "scientific," our legal enactments relating to the public health still apply chiefly to the transmissible diseases, and the doctor has had much to do with bringing about the sanitary well-being of the community by hammering into the ears of reluctant legislators the necessity of permanent, non-political, state-paid officers whose enlarging powers become increasingly international in scope. What the doctor asks and expects of them is that the hard won ground he has gained be held and consolidated, so he can quietly go about his preparations to gain more, by pushing out another salient when all is ready for a concerted attack.

By the combined efforts of both groups, doctor and sanitary official the expectancy of life has been greatly prolonged—and will be more so before we are through. Yet while we point to this triumph, there are just so many more people who live longer only to be overtaken, the health official with the rest, by unforeseen and unpreventable accidents for which they seek the best surgeon they can find, or by some malady for which they demand the very best physician—like enough a highly trained specialist.

In short, for every disease from the beginning of time we have learned to escape by prevention, or to alleviate and even cure by drugs, there remain disorders beyond enumeration we cannot yet dodge because we don't know their cause. And even when this slowly and laboriously is determined for one malady after another, so that it may in turn be eliminated, would people only obey the laws of health, something else promptly crops up to take its place, for hitherto unsuspected derangements of our poor bodies are being detected and described almost daily.

Three fifths of the practice of medicine depends on common sense, a knowledge of people and of human reactions—More than half of the remainder is tech-

nological and mechanical, the work of those medically trained artisans we call surgeons. What remains may be termed preventive, and this in bulk very properly and inevitably comes to be taken over by the state, though people, being what they are, find ways of evading a disagreeable statute as in the case of compulsory vaccination—intended for others but not themselves. Not everyone obeys the traffic light and every regulation breeds its jay-walkers and its racketeers.

Legislation and attempted coercion do not always accomplish what reformers anticipate. The country's recent quixotic experience with prohibition, the most important health measure ever sanctioned by a government, however well intentioned, probably set back rather than quickened that much to be desired goal of national temperance which by natural processes was slowly gaining ground. At great expense, a commission sat long and wearily on this subject, again without coming to a unanimous voice. And finally the mass of sober, obscure people of small means, who as usual were bearing the chief expense of enforcing a law which was breeding crime and disobedience, though inarticulate, at least could vote. So almost as one they decided, in spite of the lost ground and its disheartening confusion, to take a fresh start toward the slow cultivation of national restraint in the use of intoxicants. "The fallacy," said Sumner, "of all prohibitory, sumptuary and moral legislation to protect people against themselves is the same."

There has been much idle talk, too, regarding scientific medicine and the modern scientific doctor who with his ingenious appliances and mathematical exactitude has come to supplant the old-fashioned "practical" doctor. For hasn't he—or mostly his trained technicians—taken our blood pressure, our electrocardiograms, our basal metabolic rate, lumbar punctured us, ophthalmoscoped us, ventriculogramed us, x-rayed us from top to toe, studied under the microscope everything we can expel for him besides drawing off our blood for the same purpose, looked in all our orifices, tickled the soles of our feet, charted our calories, our calcium and phosphorus and nitrogen intake and output? It's peculiar after all that time and expense they can't seem to tell why Johnny has fits, perhaps blunt old Dr. Brown up country was right when he said that Johnny, during that attack of flu, had what *he* would call inflammation of the brain and the city doctors encephalitis lethargica—for which they charged more. But whatever it was called, he was sorry to say it couldn't have been prevented, nor was there much he or anyone else could do for it, and we'd just have to grin and bear it.

As a matter of fact, it will be a great shock to laymen to learn that a great part of what is called scientific medicine is a fetish and wholly unscientific. We have instruments of precision in increasing numbers with which we and our hospital assistants at untold expense make tests and take observations, the vast majority of which are but supplementary to, and as *nothing* compared with, the careful study of the patient by a keen observer using his eyes and ears and fingers and a few simple aids. The practice of medicine is an art and can never approach being a science even though it may adopt and use for its purposes certain instruments originally designed in the process of scientific research. In the case of Mary who got behind at school it has been found, to be sure, that her basal metabolic rate was minus five per cent, so she is now taking thyroid extract, and though it makes her nervous it's scientific-

cally correct, the doctor says and she must keep on with it.

Life is a competitive episode and, since capabilities differ and opportunities vary, some will prosper and some will not. This is sad, but it is futile to complain of these inequalities, for they are biologically inevitable. That all men are born free and equal is a noble sentiment, but in life's struggle experience shows they don't long remain so. "Liberty, equality and fraternity" is another republican shibboleth as impracticable and unattainable as the pole-star of Marxism in any social group much larger than the family and not always possible there. A somewhat more ancient idealism, expressed in another three words, may be found in the first chapter of Corinthians, and from that source the man who does his best to comfort and heal has inherited the belief that the greatest of the three is charity.

In spite of all the discouraging things they are permitted to learn about the units composing society, the doctor and the priest continue to have not only hope for but faith in their fellow men and expect them, in spite of their frailties, to be unselfish and honest till they prove themselves otherwise, whereas in trade, politics and the law, we are told, a man is primarily taken to be self-seeking until he proves the contrary. It may amount to the same thing in the end, but it at least shows a different approach, and it may partly explain why the doctor, compared with others, is known to be a poor business man. Thus, after all, may not be an unadmirable trait even though the dollar is taken to be the common measure of "success" in our present-day world, which looks scornfully on his financial incompetence.

I recall once being at 13 Norham Gardens in Oxford when the Regius Professor received a cable from a Maharaja in India. "Request you see son injured yesterday's polo game. God will pay the bills." The Regius promptly acted on this request, cabled reassurances to the Maharaja, and charged it up to the Almighty, already heavily in his debt. No, the doctor in the past has not been good at business and most of those who happen to possess that talent soon leave the profession for fields where they more properly belong.

Why he should refrain from forcible collection of his unpaid bills, why he does not patent some of his prescriptions, inventions and discoveries and make a fortune, why he should continue to counteract the spread of diseases he has painfully and at great educational expense learned how to diagnose and treat, why he should so strenuously oppose year after year the efforts of antivivisectionists and antivaccinationists with their Christian Science allies to cripple research and to annul statutes already on the books, knowing his calls would increase did they have their way, and why at the same time he should continue to work longer hours for less pay during a shorter life of activity than most people is an enigma to a hardheaded business man.

To be sure, business is now recognized as one of the professions in certain educational circles but whether this will elevate the ethics of business which is fundamentally competitive rather than fraternal, or whether it will undermine the code of medicine remains to be seen. With business goes advertising and there are few forms of it more profitable than the manufacture and sale of proprietary medicines over the same counter with candy, cosmetics and cigarets. Even science has unblushingly begun to spread her experimental discoveries in the raw before the public by fostering a lay

journal for the purpose. And since everyone is doing it, how long will the doctors continue as a class to resist? When they no longer do, and adopt the advertising methods of those parasites of the profession, the quack and the patent mediciner, God help the man of modest means and everyone else, whether below him or above him in the social scale, who may some day need a doctor.

He, the man of modest means, is at the mercy of an organized racket beside which "bootlegging" is as child's play, for that was a nocturnal game and this is played in the open. Lost somewhere in the Department of Agriculture is a Food and Drug Bureau which does its feeble best to control what is printed on the package advertisements. But only the Federal Trade Commission, which probably is composed of lawyers, could, if they saw fit, put a stop to the falsehoods the press continues to carry regarding the contents of the package. And when such a thing as an influenza epidemic comes along and every newspaper in the country is spread with advertisements of cheap proprietary sure-cures, what are the people to believe? If any embarrassing questions are asked, you may be certain that your congressman has already been instructed by a well organized lobby not to interfere with what is a profitable business.

The explanation of the doctor's seeming want of business acumen lies partly in the restraining influence of his time-honored precepts of conduct, partly in his preference to hold the respect of his own kind rather than of the financial world, and partly because inherently he's that kind of person else he wouldn't have gone into medicine in the first place. He's already done a great deal not only for the poor but for the man of modest means as well, and it is offensive to be told by a board of lay people that he's neglecting them.

I have been led to look up the records of my one hundred and fourteen medical classmates who after a three-year course were turned loose on the community now almost forty years ago. Some sixty per cent of them went promptly into general practice, and too many have broken down or died ahead of their patients. And though the survivors are modest fellows who don't like to talk even to a schoolmate about their measure of success, far less of any grudges they have against the world, what they do say runs something like this: "I'm in general practice in the small town where I was born, and proud of it. I've been sufficiently successful to raise and educate a family. I've served my country as a first lieutenant in time of war, and for a longer time my district as health commissioner in times of peace. I still retain my self-respect—with the exception of giving out liquor prescriptions. Distinctions none, not even having a baby named after me, which is unusual for a country doctor. *Hobby* my family, my patients, and a keen interest in world events."

Now to what I would chiefly call attention is that, of these graduates of forty years ago, who have lived in town or country the lives of general practitioners, a large percentage of them have served their communities in some public capacity, more often as health officer or as member of the local health board. But a basic medical education is no longer considered either desirable or necessary for the holders of such positions. The health officer must be a specialist among other specialists with which medicine is already overloaded.

Stirred by what may be accomplished in checking the spread of certain bacterial and protozoal diseases by a medically trained Gorgas or a Leonard Wood, in the

hope of perpetuating their species, a vast sum of money is set aside to educate separately and by a short cut those who are to take their places, all too often political appointees, which means for all of us a little higher tax. But when it comes to the ever recurring fight against adverse legislation relating to tuberculous cattle, to compulsory vaccination, and much else, it's again the doctor, personally known in the legislator's home and with no conceivable ax to grind, who must usually come to the defence of the paid local official lest ground be lost.

I don't for a moment mean to imply that we should go back, for there's no going back. I merely wish in fairness to recall what the practitioner in the past has done to safeguard public health and to point out that the chief burden of expense, when government enters in, always falls most heavily on the same man of modest means. And could he be heard, he would probably say: "Go slow with this proposal to insure me against those innumerable ills beyond control of the health officer. It will mean an elaborate organization of persons to make the system work, some form of racket will certainly grow out of it, comparable to the veteran racket, and even should the state take it over, it comes out of my pocket just the same."

And if the average man feels uneasy over the obligation to carry some additional insurance, the doctor feels even more so from his experience, at close hand, with the system of employer's liability insurance compulsory in certain states, which is a veritable hothouse of malingerers. At variable periods after a trifling injury a man reports at an ambulatory clinic or consults a doctor, sometimes a succession of doctors. Apart from his complaints, nothing is found wrong with him, but the case history is conscientiously taken and the results of the examination are recorded. Ere long the doctor finds himself summoned either by the man's lawyer or by the lawyers of an insurance company or both, to appear on a certain date with all notes of the case. It turns out that the man is suing his former employer for \$10,000 damages, knowing that back of him stands an insurance company that will probably settle the case rather than have it come to trial. The man almost certainly is a malingerer, but it's always possible to find someone willing for a certain sum to testify to a one hundred per cent disability because of that bump on the head from an electric fan two years ago.

Another form of legal racket which thrives on the insurance system at the expense of the profession is the rapidly spreading prevalence of malpractice suits, particularly against surgeons, for imaginary grievances sustained, more often than not, as the outcome of some operation done purely for charity. When one asks reputable lawyers about this, they merely shrug their shoulders, and against the evil the doctor is obliged heavily to insure himself and even then may not escape. Need we wonder at the mounting costs of medical care for honest people?

The impractical doctor at this juncture, after reading the reports of the Commission, ventures, half aloud, to suggest that the most effective and least burdensome form of voluntary health insurance would be for everyone to cut in half his (or her) annual expenditure for tobacco, which would not only leave more than enough in the family budget to pay all the costs of medical care in the family but would eliminate a multitude of incapacitating nervous disorders in the bargain. To this the economist scornfully replies that such a mad scheme would be ruinous to the tobacco planter, would under-

mine the huge superstructure of industry that he carries, would put an end to the alluring illustrations of smoking females which beautify the magazines and the countryside, and though there is not a cough in a carload, one mustn't forget that the U S Treasury gets three cents on every package sold

Alongside this agitation regarding the expense of doctoring has gone a careful study of the prevailing trend of medical education. And as many of us here have been, or are still, actively engaged in teaching, we have all probably asked ourselves—even ventured to ask in faculty meetings—just what are we trying to make of our medical students? Departments multiply and every teacher, if he's what he should be, believes his own field to be of major importance, and there lurks in his breast the hope that some few of the leaders in each class before him may be lured into his special subject

From the first day, therefore, the prevailing system points toward that very thing which we now decry—overspecialization. And since science is now everywhere in the saddle and chief emphasis is laid upon it, the premedical sciences have first say and we tend more and more to carry great institutions of research as appendages to our schools, now manned in increasing numbers by teachers who have had no medical training, far less actual experience with the handling of patients.

I don't mean to say that this is all wrong and that there should be a *bouleversement*, I merely wish to point out that it makes the training of the doctor a long and highly expensive process and has had not a little to do with the expense of medical treatment. In actual fact, our schools no longer pretend that the degree of M D which students attain after four years prepares them for practice, we merely bring them to the point at which they must on their own initiative scramble for a hospital appointment where they hope to acquire what the school has neglected to give them—the training necessary to secure a license to practise.

With the degree, the school's responsibility—even interest—appears to end, and no school that I know of makes a consecutive and comparative study of its educational product. The surgeon in these later days who does not conscientiously follow up his cases to know what may be the ultimate outcome of the operations he performs is looked upon as an undependable routinist, and one would suppose that every medical school would wish to know what was the end-result of its teaching. In my own school, at least, there is no such record beyond what is kept for social purposes by class secretaries, so it is impossible to learn, apart from the meagre information supplied by the national directory of physicians, how many men today compared with forty years ago are attracted into the sciences, immediately take up a specialty, turn to some salaried position in public health or one of the services, or largely go as of old into general practice.<sup>1</sup>

There has been much lamentation about the disappearance of the family doctor but, as already shown, he's not often heard from and I am far from believing that he's a vanishing species, in spite of our scholastic

neglect of him in a system, which, by over-emphasis on research and prevention, rather than on diagnosis and treatment, gives him while an undergraduate a sense of inferiority which he hopes to overcome by going quickly into a small special field of surgery or medicine, however ill prepared.

And should the report of the Lowell Committee lead our class-A medical schools to realize that for the practical requirements of the family doctor there is too much early teaching without a hint at its application, and should it lead to such a modification of the course that the prospective patient and his malady are in the student's mind and before his eyes at least for an hour or two of every day for four years instead of a scant two, society would greatly benefit, and there would be less reason to complain of the high costs of doctoring. There is every reason to believe that out of this system there would emerge just as many capable investigators who choose to devote their lives to research, just as many who feel the urge to strive for an academic career in clinical medicine, and just as many future leaders in the public health service as we now produce by the curricular program of isolated compartments now in fashion.

The physiologist complains, probably with some justice, that the principles he has laboriously taught are not sufficiently dwelt upon at ward rounds, the pharmacologist, that therapeutics is neglected, the bacteriologist, that not enough stress is laid on allergy to which a new journal is entirely devoted, and now pressure is being brought to bear to have all bedside teaching permeated with emphasis laid on *prevention*, as though this were something novel to the clinician.

A rose by any other name is just as sweet, and there has been in common English usage for the past four hundred years what the doctor has known as prophylactic (to keep guard before), meaning precautionary, medicine. And it would be a slur on the students' intelligence for a surgeon, let us say, to point out, as he has been urged to do, that he wears rubber gloves to "prevent" infecting the patient, gives the anesthetic to "prevent" pain, removes the appendix to "prevent" peritonitis, and so on, *ad infinitum*. For his own part, he sits down and has a cup of tea to "prevent" fatigue and then to "prevent" irritation keeps away from the faculty meeting where the great importance of preventive medicine will again be pointed out to him. Like many another catchword—"reconstruction," for example, which was on everyone's lips after the War—"prevention" can be very much overworked. There is only one ultimate and effectual preventive for the maladies to which flesh is heir, and that is death.

So the bewildered and harassed clinical teacher, be he physician or surgeon, can only say in rejoinder that it is futile to talk about preventing something one does not yet know how to recognize, that the short time at his disposal hardly suffices to teach the student how first to detect some few of the more common diseases and their complications, that in coming to a diagnosis the history and the physical examination of the patient are the important things and the findings of the laboratory purely subsidiary, that with more than half of the persons who have some ailment to complain of it's impossible to tell quite what is wrong so that recourse must be had to encouragement and symptomatic treatment, that the knowledge of how to deal with the sick comes only with long experience, that the man and his mental reactions to his troubles must be treated as well as the disorder itself even when its nature is clearly

1 It is quite possible that the tendency toward specialization has been considerably overdrawn. Just because a practitioner limits himself largely to internal medicine, to surgery or to obstetrics does not justify classifying him as a specialist. Every general practitioner comes to be known in his community and recognized by his fellows as possessing unusual skill, due to experience and good luck in a certain type of cases. Hence he is apt to be called in consultation for let us say the pneumonias, the fractures or the eclampsias of his community. Because of this altogether natural process of selection even the practitioner unless he happens to be covering his district single handed comes inevitably to particularize in his work with the passage of time.

recognized, in short, that the bearing of all that the student has learned in his preclinical courses, apart from a training in precision and accuracy, which he might have gotten as well in the clinic, has unfortunately nothing much to do with the vast majority of problems with which he will be confronted when he gets into practice.

Whether we have temporarily overstressed science and research in medical education and let it come to enslave us is not for anyone to say. If it has, the day will arrive when of itself the pendulum will swing and there will be a corrective reaction, for there usually is to whatever we overdo. In France, as all know, the traditional method of instruction has been all too much the other way about, for there it has long been the custom promptly to souse the matriculant in the sea of disease from which he must flounder his way out. This he has managed somehow to do. But now the pendulum swings and there has been, as here, a much discussed movement to reorganize medical teaching to meet the demands of the changing times. Not only is it proposed to add an extra obligatory year to the medical course, making six to qualify for general practice, but two years more than that will be required of those who would take up a specialty, and when it comes to those who aspire to be operating surgeons—so dangerous to *ses concitoyens*—an additional four years.

Even this is not all. The matter has reached and been ardently discussed in the Chamber of Deputies, where the desirability of more scholarship and less science for the practising doctor has been warmly advocated. A "back to the humanities" movement has arisen which would oblige the prospective medical student before his matriculation not only to be qualified in preliminary physics, chemistry and the natural sciences, but since all good things are of Hellenic origin, he must know Greek and Latin as well!

There meanwhile has been much pointing to Sir Thomas Browne and to Rabelais and to the Linacres of the profession, as though many of us could hope to be humanists of their sort any more than be productive investigators in the fields of present-day medical science. And while it is a subject on which a surgeon, in view of his illiterate ancestry and addiction for the vernacular, is scarcely entitled to speak, he can at least be permitted to admire and envy scholarship in his medical colleagues—even as did Pare.

Professor S. E. Morison, the historian, has called my attention to the fact that at Harvard, and probably at other universities as well, medical *Questiones* in past years were publicly debated in Latin at Commencement. In 1660 *An Motus sanguinis sit Circularis?* (Is there a circulation of blood?) In 1678 *An hep̄ sanguifcet?* (Does the liver make blood?) In 1687 *An Curatio per pulverem sympatheticum sit licita?* (Can a cure be effected by sympathetic powder?) In 1690 *An Morbi sint Contagiosi?* (Are diseases contagious?)—and so on, showing that seventeenth century laymen were interested in matters concerning which contemporary doctors, trained by the apprentice system—and not a bad system at that—were inclined to disagree.

And even at the present time, I believe that the translation of a page both of Greek and of Latin is still required of everyone who would become Fellow of the Royal College of Physicians and thereby qualify as a consultant—for how else could he use the pharmacopeia and write prescriptions, much less read the *De Motu Cordis* in the original! I was once told by Sir Henry

Head that, in 1900 when both he and Robert Bridges had gone up for their fellowship examination together, they chanced to meet on leaving the hall and he asked Bridges how he had made out with his translations. Bridges replied that the stupid examiners hadn't stated what language they wanted the pages turned into so he had translated the Latin page into Greek and the Greek into Latin.

There always has been and always will be a certain proportion of scholars and humanists in medicine—men like William Sydney Thayer, who has so recently left us—just as there will be a smattering of scientists and artists and musicians, even novelists, poets, and an occasional statesman like Clemenceau—and it will be a sad day when we all come to be cut from precisely the same piece of educational cloth. Some may happen to take their scholarship, as others pursue their hobbies, seriously, even professionally, but the curriculum has less to do with it than most of us pretend to believe.

Where now do we stand with the case before us? Sir James Paget once remarked that, so far as he could learn, he was the only person who had ever recovered from double pneumonia after nine different consultants had been called in on the case. Dame Medicine finds herself just now in a similar plight. Considering her age, she has been unusually active these past few decades and, much to her embarrassment, finds herself as "news" and altogether too much in the limelight. Being a retiring person who prefers simplicity, she has begun to show the strain of justifying the luxurious Babylonian hospitals and laboratories people of inflationary tendencies have insisted on building for her to use and give her whole time to.

Meanwhile, she has been somewhat worried by the fact that altogether too many of her offspring under the influence of the saxophone and the speak-easy have gone distinctly modern, become citified, ticker-minded, and gotten out of hand. While she has tried to console herself with the thought that this was only a temporary postbellum phase, which seemed to affect other people's children the same way, her personal responsibility in the matter was put in the hands of a commission of nineteen eminent persons for investigation. After giving them what help she could and hoping an explanation for the existing instability of the world would be found, she set about her daily tasks with customary energy and apparent good spirits.

But the real trouble began after someone persuaded her five years ago, when she was feeling sturdy enough, to submit to a physical examination—in fact, considering her recently recognized social importance, her countless dependents and retainers, not to speak of her immediate family, she should have done so of her own accord every six months at least. Why, with all her hard work these past years she probably has hypertension or something worse, which should have been taken in time!

In view of her long neglect, it must now be done thoroughly and scientifically—family, marital and past history, social environment and habits, dreams and complexes, just to start off with. High blood pressure indeed! Why, one couldn't prick or prod her anywhere without finding a sore spot. Whatever the cost, she must take a room in the medical center for a more detailed study.

With misgivings, to this opinion she reluctantly submits. A board of fifty consultants composed of experts and specialists of every sort is called in. They in turn appoint others to assemble the data necessary for a

diagnosis. Surveys are made, statistics are gathered and graphs are plotted. Twice a year to discuss and correlate the findings, the chief consultants meet, meanwhile issuing reports of progress, and being scientific rather than practical doctors, the patient is not only allowed, but encouraged, to read these protocols, and she begins to feel very shaky about herself.

It becomes perfectly evident that the family, after a fair start, has somewhere acquired a bad gene—possibly from that fellow Paracelsus. And the poor old thing has had altogether too many offspring, most of them turned loose with no sort of control. These past few months, she's not only been losing weight but showing signs of irritability and certainly should be psychoanalyzed. This so far she has flatly refused, saying it's nasty, so we must keep her in bed a while longer, perhaps a wheel chair for an hour in the afternoons, while further studies of these alarming symptoms are made.

One of her doctor sons, who for propriety's sake has been permitted to sit in with the consulting board as an observer, occasionally slips into the sickroom, pats her on the back and says "Never mind, Mother, buck up, it will soon be over, there's not much more they can find to do, and I'm sure it's not so bad as they think. Even if it is, you've had a good fling these past forty years and the boys have asked me to say how sorry we all are not to have been a greater credit to you. But you simply *must* stop reading your clinical history and watching your temperature chart or you'll get neurasthenic. What you chiefly need is a good night's sleep."

Finally the data are all prepared, and, as usual, there is want of agreement on the diagnosis and much less, consequently, on what's to be done. The gloomy majority feel that it's a deep-seated disease and probably incurable. Birth control and a better distribution of her activities on thinly populated places might be worth trying, but before it's too late, she certainly should get insured. The more cheerful minority, who know her better, think it's just a case of nerves brought on by the times, by overwork and needless worry about some of her unruly children. One or two others, disagreeing with both of these opinions, insist that, nothing venture nothing have, it's better to be bold and operate at once, as it's the only possible way to make certain there's nothing in the pelvis—and if there isn't, there likely enough won't be.

As a compromise, someone is told off to break it to the poor old thing, considerably shattered by this time and a shadow of her former confident self, that though there is something indeterminate which is radically wrong, she may temporarily leave the clinic, on payment of the bill—now amounting to several millions—which she will find at the main office. However, if she doesn't change her general habits and manner of life, which make her a menace to society, and adjust herself to what is now an industrial world dominated by business and insurance, she'll be obliged to return for an exploratory operation, and that will cost a pretty penny.

Whereupon, with thanks for their efforts on her behalf, she ventures to suggest that everyone seems to be suffering just now from a sense of insecurity and indecision and it might be as well to wait until we pull ourselves out of this slough of depression and see just where we persons of modest means all stand before deciding on anything radical. She calls to mind what Galsworthy once said the *statu quo* is of all things most likely to depart, the millenium, of all things, least likely to arrive. There might chance to be a war

or another influenza epidemic when we would need all the doctors we have and more, and all the empty hospital beds would quickly refill.

There are two sides to every question and inability to see both constitutes the fundamental weakness of all theories and particularly those relating to the biologic and social sciences. This failure even invades what is supposed to be the most exact of all sciences, astrophysics, which supposedly deals with great abstracts. But one can approach an abstract from either side, and depending on different views of cosmogeny, the universe is either expanding at a terrifying rate or contracting no less rapidly. If both views are correct, it must therefore pulsate like a macrocosmic heart.

But however this may be, those who deal with the science of society deal with something that actually *does* pulsate with so short a time cycle that conditions almost from year to year are never quite the same, so that our theories of today are likely to need modifying tomorrow. What this puzzled world needs perhaps is more study of the past, fewer commissions and surveys of the present, and a greater number of philosophically minded, self-supporting and law-abiding persons who can see all round their particular problem and independently devote themselves to it as do most doctors and as did the little knife-maker in Langres.

And should the doctor, in moments of discouragement about the shortcomings of his own tribe, now so thoroughly ventilated as to make those he is most anxious to help have misgivings about him, need like other people a timely word of comfort, he can remember that, whatever the doctor of the future may come to be, it has been said not long ago of the doctor of his particular time—and with some small measure of truth by one who had good reason to know him well—that

He is the flower (such as it is) of our civilization, and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade. Discretion, tested by a hundred secrets, tact, tried in a thousand embarrassments, and what are more important, Heracleian cheerfulness and courage. So it is that he brings air and cheer into the sickroom and often enough, though not so often as he wishes, brings healing.

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**Discarding Useless Remedies**—The problem of discarding useless remedies is still with us, because new remedies are thrust on the medical market by drug manufacturers in increasing numbers. Many drug manufacturers in various parts of the world are now actively engaged in investigating new compounds. These investigations are expensive, and the manufacturer rightly looks to recoup himself for the expense by the profits on a new drug, if he can put it successfully on the market. Until we know more about the relations between chemical constitution and physiological action, this type of research must remain largely as a gamble so far as concerns the discovery of a successful remedy. The testing of a new drug on the therapeutic side has often been perfunctory and done by medical men who have neither the training nor the facilities for arriving at a correct estimate of therapeutic value. This difficulty has recently been at least partly removed by the institution of the Therapeutic Trials Committee of the Medical Research Council. A manufacturer can now submit a new drug for the consideration of this committee and the committee can, if it believes that the pharmacological indications justify a therapeutic trial, make arrangements for a scientific and thorough investigation of the therapeutic merits of the drug.—Gunn, J. A. Remarks on the Outlook of Research in Therapeutics, *Brit M J* 2 391 (Aug 27) 1932.

## FRACTURES OF THE HUMERUS

STATISTICS AND TREATMENT IN FIVE HUNDRED  
CONSECUTIVE CASES

WILLIAM R. CUBBINS, M.D.

Associate Professor of Surgery Northwestern University Medical School  
Attending Physician Cook County Hospital

AND

CARLO S. SCUDERI, M.D.

Instructor of Surgery University of Illinois College of Medicine  
Fracture Resident Cook County Hospital  
CHICAGO

During the period of thirty-two months from September, 1927, to April, 1930, 500 patients with fractures of the humerus were admitted and treated at the Cook County Hospital of Chicago. This great volume of material afforded an excellent opportunity for careful study, and at the same time we were able to draw definite conclusions as to the frequency of complications, the method of treating both simple and complicated fractures, and the end-results of our labor.

## INCIDENCE

Fractures of the humerus compose about 5 per cent of all the fractures of the body. Stimson gives the figure at 4 per cent, von Bruns at 5 per cent, and Speed at 5.7 per cent.

In our series 233 of the fractures, or 46.6 per cent, occurred in the right arm while 255, or 51 per cent, were in the left. Twelve, or 2.4 per cent, were unclassified.

Three hundred and sixty-five, or 73 per cent, of the fractures were in males, while the remaining 135, or 27 per cent, were in females. This relationship corresponds with that reported by Gurlt, who gave the figures many years ago at 3 to 1.

The average age of all the patients with fractures of the humerus was 36.2 years. The youngest patient was 4 months of age and the oldest, 84 years.

Only one case of fracture of the anatomic neck of the humerus was encountered. This patient was 34 years of age.

Fractures between the anatomic and the surgical neck were classed as pertuberculous. These were six in number, or 1.2 per cent. The average age of the patients was 37 years.

Fractures of the surgical neck composed almost one third of all fractures of the humerus. One hundred and fifty-four were of this type or 30.8 per cent. One is surprised, off hand, at such a figure. The average age of these patients was 50.3 years, 90.8 per cent being over 16.

Not one case of fracture of the lesser tuberosity occurred during the thirty-two months. The greater tuberosity was fractured in twenty-eight cases or 5.6 per cent, ten or 35.7 per cent were associated with dislocations of the head of the humerus. The average age of the patients was 49.1 years, all of the patients being over 16. Speed and Stimson state that few cases of fracture of the greater tuberosity occur without dislocation of the head of the humerus, but we found this true in only one of every three cases of fracture. (The senior author is somewhat skeptical about this figure.)

Epiphyseal separation, partial or complete, occurred in nine cases or 1.8 per cent. This included both the upper and the lower epiphysis. The average age of the patients was 11.3 years.

There were 152 fractures of the shaft of the humerus, only 2 less than those of the surgical neck. These composed 30.4 per cent of the total. Twenty-two, or 4.4 per cent, were in the upper third, 109, or 21.8 per cent, in the middle third, and 21, or 4.2 per cent, in the lower third.

The average ages of the patients with fractures of the shaft of the humerus are given in table 1.

The apparent paradoxical relation between the decreasing ages and increasing percentage is correct, as many of the fractures of the lower third of the shaft occurred in patients between 17 and 30 years of age.

Von Bergmann states that fractures between the attachment of the pectoralis major muscle and the origin of the supinator longus muscle are the most frequent fractures of the humerus, but he quotes no figure. Riethus states that 53 per cent of all fractures of

TABLE 1—Age Incidence

Position	Age Years	Percentage Over 16 Years
Upper third	43.3	77.3
Middle third	36.3	81.6
Lower third	33.0	94.7

the humerus are in the shaft. Perhaps this large discrepancy as compared to our figures is a question of classification.

There were eighty-three supracondylar fractures, or 16.6 per cent. The average age of the patients was 27.6 years. This apparently high average age was produced because several of the patients were well over 65. A truer conception is had when one finds that 67.5 per cent of the patients were under 16.

Dicondylar fractures numbered nine, or 1.8 per cent. The average age of the patients was 16.8 years, 55.6 per cent being under 16.

There were fifty-eight condylar fractures, or 11.6 per cent. This includes one or the other condyle. The average age of the patients was 13.8 years, 86 per cent were under 16. Stimson gave the statistics in table 2 on forty-eight fractures of the humerus in the vicinity of the elbow joint.

TABLE 2—Fractures of the Humerus (Stimson)

Location	Cases
Supracondylar	8
Intercondylar	7
External condyle	15
Internal condyle	10
Internal epicondyle	8

When analyzed, the complications produced an interesting study. As complications always mean increased disability and prolonged treatment frequently associated with mutual sorrow to both the patient and the physician, they must be considered in a serious light.

Nonunion and delayed union, the most common complications, together occurred in fifteen cases, or in 3 per cent of all fractures of the humerus. It became necessary to classify these complications as one, because after a primary failure to unite the patient insisted that something be done immediately for economic reasons, so most of them were operated on prior to the four month period which separates nonunion from delayed union. It is interesting to know that all these fractures were of the middle third of the shaft. Transverse fractures were the greatest offenders, while when there were poor comminutions of the fragments, an early, firm, bony union took place.

In von Bruns' statistics of 1,274 cases of ununited fractures, there were 376 fractures of the humerus. Of 681 authentic cases of pseudarthrosis, 226 were of the humerus (33 per cent).

The combined statistics of Codivilla, Cuneo and Chutro show that fractures of the humerus result in 32 per cent of all cases of pseudarthrosis, while the

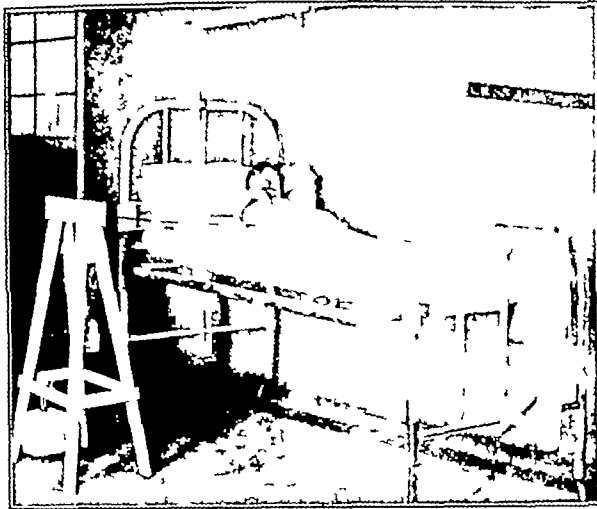


Fig 1—The ideal method of primary immobilization in fractures of the shaft or of the surgical neck of the humerus with displacement. Usually from 5 to 8 pounds is sufficient to produce a reduction. Later even as little as 2½ pounds of weight will hold the fragments in line and prevent unnecessary fibrosis of the elbow joint.

tibias, which are considered by many as the most common location of pseudarthrosis, are involved in only 13 per cent.

Radial palsies were the second most common complication. Fourteen cases were recorded, giving a proportion of 2.8 per cent of all fractures of the humerus. All these cases followed fractures of the middle third of the humerus. No cases of secondary involvement of the nerves were recorded.

When one compares the fractures of the middle third of the humerus with the radial palsies, one finds that 12.8 per cent, or about one of every eight, is associated with wrist drop. This complication was produced most commonly following spiral rather than comminuted fractures. All of our cases of radial palsy were found within two to twenty-four hours after the accident.

Surgeons distinguish anatomically between the cases in which continuity of the nerve is retained and those in which it is lost. The latter are rare. In seventy-nine cases, von Bruns found only three of this sort. In five cases in which the patients were operated on by the senior author, complete severance was never found.

Scudder and Paul reported radial palsy in 86, or 7.2 per cent, of 1,185 cases of fracture of the humerus. Von Bruns' collection of 886 cases in 1886 showed fracture of the shaft of the humerus in 53 per cent, fracture of the proximal end in 22.2 per cent and fracture of the distal third in 24.7 per cent. The latter figures of Riethus on 319 cases showed fracture of the middle portion of the humerus in 33.6 per cent, fracture of the proximal end in 35.4 per cent and fracture of the distal end in 31 per cent. In his series of cases, musculospiral paralysis occurred in 4.1 per cent. Vennat reports 13 cases in children, in 3 of which complete division of the nerve was found.

Compound fractures occurred in five cases, or 1 per cent.

Malunion (clinical, not roentgenographic, diagnosis) occurred in three cases.

Osteomyelitis developed in two cases. In one the fracture was caused by a gunshot wound, and in the other an extensive soft tissue trauma and a spiral comminuted fracture were sustained during an automobile accident.

There were two pathologic fractures. One was caused by a metastatic carcinoma of the stomach, the other, by a benign bone cyst in a boy of 5 years. Following the fracture there was a good union in the second case, and when the boy was seen eighteen months after the original accident the humerus was firm, giving no trouble, but roentgen examination showed that the cyst was about the same size.

In one case excessive callus developed following refracture of the middle third of the humerus two months after the original accident. The mass was 7 cm in diameter at the time of the patient's discharge. There was a good union, with absolutely no signs of radial palsy. He was seen three months later, and the mass had decreased to 4 cm.

#### TREATMENT

The treatment of fractures of the humerus varies considerably in different institutions, and even among physicians in the same clinic. The following methods have been used by us with uniformly good results.

The only patient with fracture of the anatomic neck of the humerus who came under our observation was treated in traction for three weeks and then in a Middelдорpf triangle for two more weeks with a good end-result anatomically and clinically.

Buchanan believes that excision of the head of the humerus is the best method of treatment. He cites fourteen cases from the literature in which two results were excellent, six good and one moderately good. There were two deaths. Although our experience has

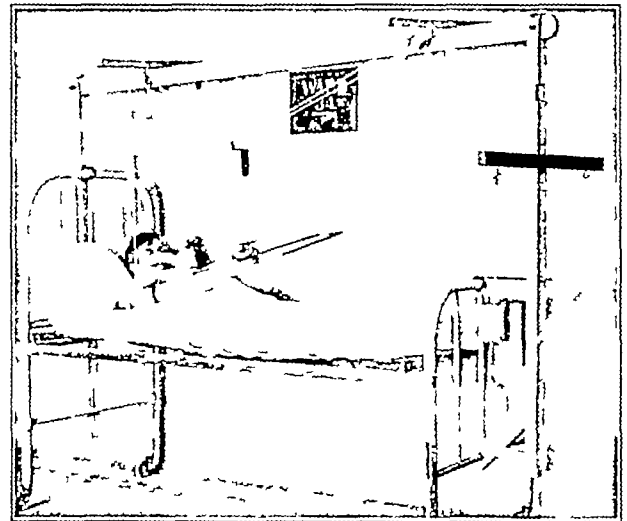


Fig 2—Occasionally it becomes necessary to bring the arm parallel to the body to get the best apposition of the fragments. This position is rarely required but should be kept in mind.

been limited to only one case, we believe that the operative removal of the fractured fragment is too radical and should be used in cases in which treatment by the conservative methods has been unsuccessful.

Unless a fracture of the surgical neck of the humerus is of the subperiosteal or impacted type in good position, which we have found not to be common, we

prefer treating the patients in traction for from three to four weeks with from 3 to 8 pounds. The weight and time depend on the size of the patient, the displacement, the age and the clinical observations in the case. The weight is decreased as the muscle spasm diminishes, as soon as sufficient callus forms to prevent recurrence of the deformity, the patient is placed in some form of ambulatory immobilization such as the airplane splint, Middeldorpf's triangle or a Velpau bandage. After about two weeks of this immobilization, which we term secondary (the traction in a Thomas splint being called the primary immobilization), the arm is put in a sling, and guarded use is encouraged. We consider the sling the tertiary form of immobilization. Patients with subperiosteal or impacted fractures in good position may be treated by the secondary form of immobilization immediately.

We have found it of great advantage, with a decreased length of disability, to treat fractures of the surgical neck and the upper third of the humerus by the double Buck extension, one holding the forearm at right angles to the arm and the other pulling the humerus laterally at right angles to the axis of the body. These patients, even after four weeks of immobilization, may use their arms the first day the traction is removed, so good is their elbow, shoulder and wrist motion. However, in cases of fracture of the shaft of the humerus with bad displacement of the fragments, or in those of fracture of the middle and lower thirds of the humerus which are not easily held in position, straight arm extension should be used even at the expense of mobility of the elbow which may require weeks to return.

The general plan of treatment for fractures of the shaft follows rather closely the methods just discussed, the immobilization being slightly longer because the union does not occur as quickly.

In children, greenstick fractures are treated by the use of plaster, frequently in the form of a Velpau bandage.



Fig 3—An airplane splint made of plaster with a metal reinforcement running up the thorax to the axillae—along the arm to the elbow and then down to the crest of the ilium. The cast runs low enough to be firmly fixed on the crest of the ilium. The parts at the shoulders, elbow and pelvis are padded with saddle felt to prevent pressure on the bony prominences. This is occasionally used as a primary form of immobilization but usually as a secondary method of fixation after the patient has been taken out of traction.

Physical therapy is always used as soon as the callus appears to be clinically substantial. Diathermy may be used on the muscles while in traction to great advantage, decreasing the period of disability. However, when the quantity of material is too scanty or the institution is not free with funds, the foregoing luxury is often done without.

We have been unable to hold complete fractures of the shaft, either oblique or transverse, in satisfactory position by the use of any ambulatory method, except in a few selected cases. In fact, the results in our hands were so poor compared to the extension method in bed that we have practically abandoned it as a form of primary immobilization. As a form of secondary splinting, after the callus and alinement have been satisfactorily produced by the recumbent method, the



Fig 4—A modified Velpau bandage of plaster applied over a sling used as an excellent postoperative form of immobilization for fractures of the humerus. Sheet wadding is first applied so as to cover all bony points, then only three rolls of 6 inch plaster, 10 feet long are used, thereby giving the cast a pliable consistency. It is comfortable to lie on. More plaster than this makes it too rigid for absolute comfort.

ambulatory methods are ideal (airplane splints, Robert Jones splint, Middeldorpf's triangle or plaster).

Fractures of the greater tuberosity numbered twenty-eight, ten being associated with dislocations. All the patients were treated conservatively. One case later required operative removal because of restricted abduction. After reduction, nearly all of the patients had good approximation of the detached fragment if the humerus was abducted to 45 degrees. Few cases required 90 degrees abduction. We were unable to confirm the opinion of some investigators that the evulsed fragment is always pulled away to the extent of maximum abduction of the humerus. Much to our amusement, several of the fractures remained in excellent position after the dislocation had been reduced by merely immobilizing the humerus along the thorax in a Velpau bandage of plaster. To us, this was a revelation, after hearing so much talk to the contrary from some of our colleagues.

Supracondylar fractures were uniformly well reduced if seen early, by first hyperextending the elbow and pulling the distal fragment down to its normal position, and then correcting the posterior displacement and bringing the forearm into acute flexion and complete supination. This position is then held either by adhesive strips, or by a posterior molded splint for from fourteen to twenty-one days, followed by gradual extension and passive motion. Passive motion and later active motion are used, depending on the age of the patient and the clinical observations in the case.

Occasionally, fractures of the condyles or epicondyles require operative treatment owing to persistent displacement. We prefer catgut suture to the periosteum in young patients, while in older patients a screw is frequently inserted and later removed.

Of the 500 patients, 472, or 94.4 per cent, were treated with the closed methods. Operations were performed in all cases in which the conservative methods had not obtained the desired result. It was necessary to operate in only twenty-eight cases. The indication and the type of operation are listed in table 3.

TABLE 3—Indications and Type of Operation in Twenty-Eight Cases

Indication	Cases
Nonunion	15
Displaced condyle	8
Fracture dislocation	3
Fracture of greater tuberosity with limited abduction	1
Osteomyelitis	1
<b>Total</b>	<b>28</b>
<b>Operation</b>	
Intramedullary bone peg	11
Intramedullary bone peg with osteal periosteal grafts	4
Pegging of condyle	2
Removal of condyle	2
Removal of excess callus	2
Onlay graft	1
Removal of greater tuberosity	1
Insertion of screw into head of humerus	1
Sequestrectomy	1
Removal of Sherman plate	1
Resection of head of humerus	1
No mention	1
<b>Total</b>	<b>28</b>

One will readily note the apparent lack of the use of foreign bodies as forms of internal fixation. We have found by experience that they frequently lead to trouble, and unless they are removed soon after they have completed their cycle of use they many times give rise to trouble years later.

Until a year ago, when performing open reduction on the shaft of the humerus, we were accustomed to strip the periosteum loose from the humerus and quickly angulate the ends of the bone through the wound. We did this readily by the use of Lane elevators, being careful of the radial nerve, and staying close to the bone. After the insertion of an intra-

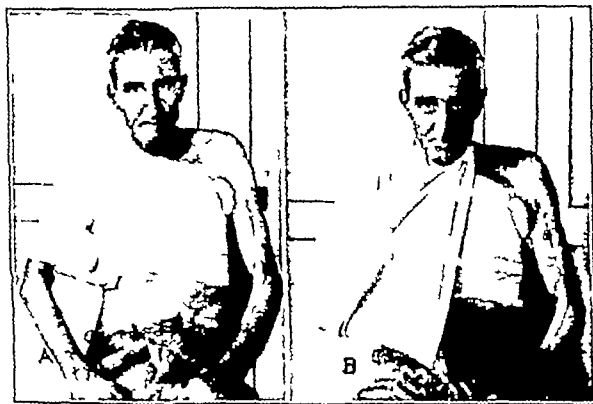


Fig 5—A a modified Middelдорpf triangle made of boxwood held together by adhesive tape and then padded so as to not become uncomfortable. We never make it more than 5 inches on a side, and usually it is made as an isosceles triangle. After it is fitted into the axilla it is snugly wrapped with bias army style bandage. B after the triangle has been firmly applied a sling is worn. The patient can judiciously use the elbow, wrist and fingers while the fragments are held practically immobile, especially if the fracture is of the upper third of the humerus.

medullary bone peg, it was found that the fragments had too much range of motion in spite of the internal form of fixation. On one occasion we carefully preserved the posterior periosteum instead of tearing it in the usual manner. After the insertion of the peg, we found that by pulling the elbow forward the posterior periosteum acted like a taut rubber band, the more

tension that was placed on it, the more firmly was the fracture immobilized. This method was so highly satisfactory that we have used it in every case in which the conditions have been favorable. After the wound has been closed and the dressings applied, a Velpeau bandage of plaster is applied, and the immobilization is excellent. We are offering this trick to the medical profession, hoping that those who are having the same difficulty with immobilization by internal fixation as we had will find it of value.

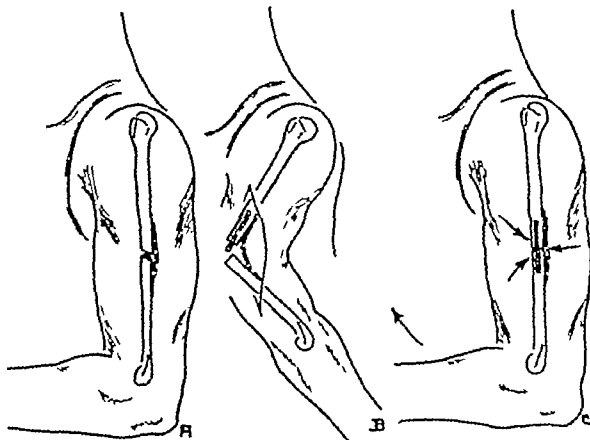


Fig 6—A a transverse fracture of the middle third of the humerus with the posterior periosteum carefully preserved so as to be used later as a splint. B the fragments have been angulated out of the wound. The posterior periosteum has been preserved and the autogenous intra-medullary peg inserted. C the fragments have been straightened into their normal position and the intra-medullary peg has been pushed equally into the two fragments. The forearm has been flexed to a right angle bringing the fractured ends snugly against the posterior periosteum, which acts as a splint, preventing any possible posterior angulation. The arm is then immobilized in a Velpeau bandage of plaster of paris.

#### CONCLUSIONS

- 1 Fractures of the upper two thirds of the humerus are more common in adults, while those of the lower third are more common in children.
- 2 Fractures of the surgical neck of the humerus are more numerous than any other one type of fracture of the humerus (in our series).
- 3 Open reduction was required in one of every eighteen cases.
- 4 Nonunion and delayed union occurred in one of every thirty-three cases.
- 5 Radial palsy was found in one of every thirty-four cases of fracture of the humerus, or in one of every eight cases of fracture of the middle third of the humerus.
- 6 Complications of some type occurred in one of every nine cases of all fractures of the humerus.
- 7 Fractures of the surgical neck and the shaft of the humerus were best treated by primary immobilization, or traction, for from three to four weeks, secondary immobilization with Middelдорpf's triangle, an airplane splint or a Velpeau bandage for two weeks, tertiary immobilization with a sling for one week, and total immobilization for from six to seven weeks.
- 8 Fractures of the greater tuberosity do not require 90 degrees of abduction, except in rare cases.
- 9 Supracondylar fractures give the best end-result if treated in maximum flexion and complete supination.
- 10 Foreign bodies should be avoided as much as possible in open reduction.
- 11 The value of preserving the posterior periosteum in open reductions for fractures of the shaft of the humerus should be kept in mind.

# THE HIGHER CARBOHYDRATE DIET METHOD IN DIABETES MELLITUS

ANALYSIS OF ONE THOUSAND AND FIVE CASES

P. A. GRAY, MD

AND

W. D. SANSUM, MD

SANTA BARBARA, CALIF.

During the past seven years we have observed the effects of diets which, so far as their carbohydrate content is concerned, are more liberal than the so-called classic or strict diabetic diets. At first, the interest of one of us (W. D. S.) in this type of diet was (1) to learn how much carbohydrate could be substituted for fat in the diet of a diabetic patient taking a constant dose of insulin, without producing glycosuria, and (2) to perfect the older diabetic diets from a nutritional standpoint. Any one who has prescribed the older diets will recognize their nutritional deficiencies. Sansum, Blatherwick and Bowden<sup>1</sup> reported in 1926 that they had "been able to substitute more than an equal number of grams of carbohydrate for the fat omitted." Subsequently it was observed that even greater liberality as concerns carbohydrate could be permitted the diabetic patient without apparent detriment. The improvement of the new diets over those necessary in the preinsulin era is obvious: an increased carbohydrate ratio makes possible a greater amount and variety of minerals and vitamins, and "balances" the diet to a more nearly normal, or nondiabetic, standard. Clinical experience has led us to believe that it is not only possible and practical to feed the diabetic patient a diet that approaches normal, or nondiabetic proportions as regards the carbohydrate-fat ratio, but that it is advantageous to do so. The present study was undertaken to ascertain whether or not objective evidence obtained from the case records would substantiate this impression.

Our material consists of 1,055 cases of glycosuria admitted to the metabolic division of the Santa Barbara Cottage Hospital and to the Sansum Clinic between Jan. 1, 1925, and Jan. 1, 1932. Of these patients, who were for the most part private white patients of the upper middle class, 1,005 were considered to have true diabetes mellitus, 31 potential diabetes, and 7 renal glycosuria. The material is equally divided between the sexes, there being 504 males and 501 females. The distribution according to age is 9 in the first decade, 74 in the second, 71 in the third, 67 in the fourth, 135 in the fifth, 273 in the sixth, 281 in the seventh, 83 in the eighth and 12 in the ninth. As might be expected, over half (55.1 per cent) of all cases occurred during the sixth and seventh decades. A familial incidence was noted in the histories of 239 cases (23.9 per cent).

Ninety-five patients are known to have died prior to Jan. 1, 1932, and in eighty-one of these cases the cause of death is accurately known. Table 1 lists the cause of death and the average age at death of the patients in each group. Uncomplicated coma has not been a cause of death since 1925. The ages of the two patients who died in that year and in whom no other cause for death except coma could be found were 8 and 15 years.

The shift from coma to arteriosclerosis as the chief cause of death among diabetic patients has been a conspicuous feature of recent mortality statistics (Joslin,<sup>2</sup> Warren,<sup>3</sup> Leutengegger<sup>4</sup> and others). Arteriosclerosis appears as the chief single cause of deaths (40 per cent) in our series. The average age at death in this group was 63 years.

## ARTERIOSCLEROSIS

The distribution of arteriosclerosis among these cases has been computed by decades and for the duration of diabetes. All three of the usual criteria for recognizing the presence of arteriosclerosis have been used: (1) pathologic evidence from postmortem examination of fatal cases, (2) roentgen evidence of calcification of arteries, and (3) clinical evidence of visible changes in the retinal vessels, palpable thickening of peripheral vessels and persistent hypertension. Since all the fatal cases are included in this study,<sup>5</sup> it is weighted in favor of arteriosclerosis. An increasing incidence of arteriosclerosis by decades is apparent. Only two cases were noted before the fourth decade. From there on, the increase is definite and constant each decade until 100 per cent is reached in the ninth decade. No comparable rate of increase, however, is noted in the groups representing the duration of diabetes. The percentage of patients exhibiting arteriosclerosis whose diabetes was of less than two years' duration was practically the same as those whose diabetes was from six to ten years' duration, as shown in the accompanying chart. This finding is in general agreement with Leutengegger's<sup>4</sup> work and suggests that arteriosclerosis is more closely correlated with age than with the duration of diabetes.

TABLE 1—Causes of Death in Diabetes Mellitus with Average Age at Death

	Number of Cases	Per Cent	Average Age
	95	100	55
All causes			
1 Coma			
a Alone	2		
b Complicated	8	10.5	20
2 Cardiorespiratory Vascular Disease			
a Cardiac	23		
b Nephritic	1		
c Arteriosclerosis	10		
d Gangrene	4	33	40
3 Pulmonary tuberculosis	11	11.6	39
4 Infections			
a Pneumonia	4		
b Others	3	7.4	54
5 Cancer	9	9.5	61
6 Miscellaneous			
a Suicide	2		
b Cirrhosis of liver	1		
c Pulmonary edema	1		
d Shock	2		
e Undetermined	14	20	56

The prevalence of arteriosclerosis and its sequelae among diabetic patients is well known. The elaborate clinical studies of Joslin<sup>2</sup> indicate that arteriosclerosis appears prematurely among sufferers from this disease. Warren<sup>3</sup> also states that pathologic evidence of arteriosclerosis was present in all cases of his series in which diabetes had been present for five years. However, he admits that his series is not typical of insulin-treated

2 Joslin E. P. The Treatment of Diabetes Mellitus, Philadelphia Lea & Febiger 1928.

3 Warren Shields. The Pathology of Diabetes Mellitus. Philadelphia Lea & Febiger 1930.

4 Leutengegger F. Diabetes Mellitus und Gegaszsystem. Ztschr. f. klin. Med. 119: 164, 1931.

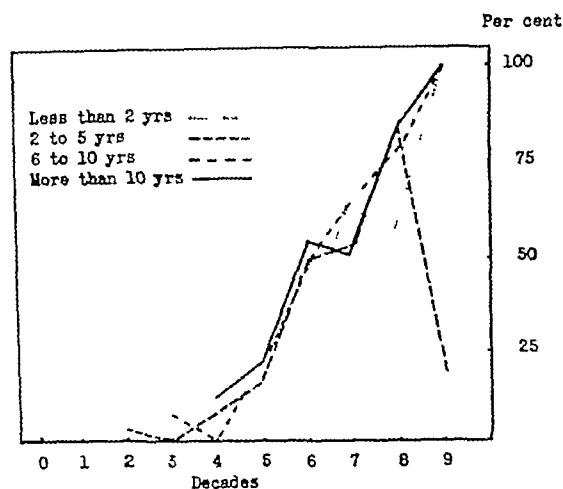
5 Tables 2 and 5 which have been omitted from this publication are included in the reprints which the authors will be glad to send on request.

From the Santa Barbara Cottage Hospital and the Sansum Clinic.  
1 Sansum W. D., Blatherwick, N. R., and Bowden, Ruth. The Use of Higher Carbohydrate Diets in the Treatment of Diabetes Mellitus. J. A. M. A. 86: 178 (Jan. 16) 1926.

cases. One could scarcely expect two series of cases to be completely comparable when one is selected from a pathologic and another from a clinical point of view. Pathologic criteria are certainly more exacting than either roentgen or clinical criteria. Clinical series would probably not reveal so much arteriosclerosis as would appear in pathologic series. Early sclerotic change of the arteries, particularly of the aorta, would naturally be missed by clinical examination but would appear in any series of pathologic studies. However, the relatively low incidence of arteriosclerosis in our series and in Leutenegger's<sup>4</sup> series before the fifth decade, even in cases of long duration, may indicate a new phase in the history of diabetic management. Adequate insulin therapy may be changing the general picture. Also, we even dare to hope that more adequate nutrition, made possible by insulin, will arrest in the early stages the arteriosclerotic changes of the young diabetic individual.

#### NATURE OF THE DIET

There is considerable lack of understanding and some misunderstanding of the nature of higher carbohydrate diets. A higher carbohydrate diet does not mean an



Incidence of arteriosclerosis in 1005 cases of diabetes mellitus

unlimited or "free choice" diet such as Stolte<sup>6</sup> has recently advocated. Table 3 shows the average type of diet that has been used during the period covered by this study in each type of diabetes. In each group the number of grams of carbohydrate has averaged slightly more than twice that of fat used. The tendency during the last few years has been to use from 3 to 4 Gm of carbohydrate per gram of fat without any change in the calorie-to-kilogram ratio. The adults have received 30 or less calories per kilogram except when such complications as extreme malnutrition, tuberculosis or hyperthyroidism have been present. With children, we have been more liberal. The average diet served to all patients in the metabolic division of the Santa Barbara Cottage Hospital in 1926 was carbohydrate 206, protein 79, and fat 99, totaling 2,031 calories; in 1931 it was carbohydrate 184, protein 66, and fat 82, totaling 1,738 calories. We do not believe that this represents the degree of overfeeding that our critics have assumed.

In the preparation of the diets, all staple foods except cane sugar, honey, and foods sweetened with any of these are employed. Aside from this restriction, the

patient may select what particular foods he likes within the limitations imposed by the diet formula. In the institution, all diets are weighed, and the patients are encouraged to continue this practice at home. Fruits, vegetables, milk, eggs, meat, bacon, bread, cereals,

TABLE 3—Average Diet and Insulin Requirement

Diabetic Type	Age	Weight Kg	Diet					Insulin Units	Per Cent Discontinued Insulin
			Carbohydrate	Protein	Fat	Calories	Cal/Kg		
Juvenile	14	41.5	228	80	104	2,163	51	83	0.1
Adult (with insulin)	53	63	204	71	91	1,919	31.8	45	10.6
Adult (without insulin)	68	75	178	65	71	1,511	23.8	0	

butter, cream and salad dressings constitute the diet. The variety of foods offered adds attractiveness to the meals and helps to reduce to a minimum the feeling of "being on a diet." Adequate amounts and variety of minerals and vitamins are provided for on each diet. In short each diet is as nearly adequate nutritionally as it can be made under the circumstances.

Reluctance to accept the higher carbohydrate principle in planning diabetic diets has frequently rested on a fear lest these diets might require impossible amounts of insulin daily. Unfortunately, the early reports from this clinic dealt with severe and complicated cases principally<sup>1</sup> when larger doses of insulin were necessary. From table 3 it may be seen that our average child received 63 units of insulin daily and our average adult who took insulin, 45 units. All patients who used insulin for only a few days were excluded from this table. Only one of our children has been able to discontinue insulin entirely. To date, about 10 per cent of the adults who have taken insulin regularly have been able to discontinue its use. All save a very few of these patients live at a considerable distance from the clinic, so that the factor of personal supervision does not figure in our statistics as largely as it does in those from clinics that have a large local clientele. The non-insulin group represented naturally an older and more obese group in whom the disease would naturally tend to be milder.

#### END-RESULTS

We believe that the seven-year period covered by this study is a sufficient length of time in which to evaluate

TABLE 4—Seventy Cases of Diabetes Mellitus Treated with Higher Carbohydrate Diets Continuously for Seven Years

	Controlled	Partially Controlled	Uncontrolled
Number of cases	21	44	5
Average age (now)	58	46	32
Carbohydrate Gm (last diet)	296	239	241
Cal/Kg (last diet)	32	30	39
Insulin units	43	43	61

adequately the usefulness of the higher carbohydrate diets. All patients included in this study received such diets throughout their period of treatment. Seventy were under continuous observation for the entire seven years, 16 for six years, 43 for five years, 57 for four years, 97 for three years, 115 for two years, 177 for one year, and 430 for less than one year. No case was included which did not receive treatment for at least one week.

<sup>6</sup> Stolte, K. Freie Diät beim Diabetes. Med. Klin. 27: 831 (June 5) 1931.

Questions that have arisen during the course of this study are

1 Can diabetic patients partake of liberal diets without detriment to their metabolism or without excessive amounts of insulin?

2 Have these diets influenced the complications of diabetes?

3 Have they facilitated normal development of the children?

4 What is the patient's reaction to such diets?

5 Has demonstrable improvement in the patient's sugar tolerance accrued from this method of treatment?

In order to gain information regarding the end-results of this type of treatment, we have studied the records of those patients known to have used this type of diet exclusively for seven years. All these patients were communicated with recently in order to learn their present status. Table 4 shows the proportion of the cases which we consider to be satisfactorily or partially controlled and those uncontrolled. By satisfactory control we mean persistent maintenance of both a normal blood sugar level and sugar-free urine specimens. By partial control we mean occasional glycosuria or hyperglycemia. Uncontrolled implies persistent glycosuria and hyperglycemia. It is apparent from table 4 that the majority of these cases are, according to our arbitrary standard, only partially controlled. Several factors are involved here, among which are the distaste with which diabetic patients of long standing regard the continuance of weighing their diets while taking insulin, and the well known difficulty of persuading children and young adolescents of the advisability of making themselves conspicuously different from their associates as regards eating, in the interests of their health. Although the majority of the cases fall within our classification of partially controlled, it does not follow that for them the higher carbohydrate diet has been a failure. Physical vigor, mental alertness and social usefulness do not always register on metabolic progress records. Failure to show adequate laboratory control may also mean failure to apply in daily life principles learned in the diabetic classroom. The enthusiasm that the patients feel about our diet method is both gratifying and flattering. The feeling of robust health reported by the patients would in itself recommend this method. However, in order to be as objective as possible, we have confined ourselves solely to recorded laboratory data.

Our records are sufficiently complete on seventy of the original patients who received the higher carbohydrate diet in 1925 to justify critical analysis. All these patients have used the higher carbohydrate diet exclusively for seven years. A record of the age, weight, diet and insulin dose of each of these patients when they first became stabilized on the higher carbohydrate diet (first column) and the corresponding data when last examined (second column) are given in table 5.<sup>7</sup> That an improvement in tolerance as measured by a lower insulin dosage, an increased diet, or both, has been frequent among these patients is apparent from a comparison of these two columns. In forty cases (57.1 per cent) there has been a reduction in the insulin dose either on the same diet or on one of greater caloric value. One patient has been able to increase his diet on the same insulin dosage, and another, who did not receive insulin, has been able to increase his diet without insulin. In ten cases (14.3 per cent) the insulin dosage today is higher than it was at the beginning of

the period of treatment, but the diets are also greater. Two patients (2.8 per cent) have had to increase their insulin dosage, either on the same diet which they took in 1925 or on one of lower caloric value. Fourteen cases (20 per cent) today require less insulin than they did five years or more ago, but at the same time the daily caloric intake is lower. The reductions in diet and in insulin dosage are not parallel in all cases. One patient now receives a lower diet with the same insulin dosage, while another, a noninsulin patient, shows a reduction in the diet. The lowering of the caloric intake in many of these cases does not mean loss of tolerance but merely indicates the general trend of management in recent years toward lower caloric diets, as may also be seen from the shift in our average diet of 2,031 calories in 1925 to 1,738 calories in 1931. Finally, in forty-two cases (60 per cent) there has been demonstrable evidence of improved tolerance during the period of time covered by this study.

Nine of the group who have used the higher carbohydrate diet continuously for seven years are children. Separate data of their status are presented in table 6. Only one of these nine children has lived up to our criteria for adequate control, hence most of them appear in table 4 among the partially controlled and

TABLE 6—Children Treated with Higher Carbohydrate Diets Continuously for Seven Years

Patient	Present Age Years	Present Weight, Kg	Present Height Cm.	Present Diet Calories	Maximum Insulin Units	Present Insulin, Units
1	9	23.2	121.9	1,600	39	27
2	10	28.2	128.6	1,800	56	22
3	11	47.7	162.4	1,518	40	0
4	14	31.8	124.5	2,203	80	59
5	15	63.4	169.0	2,695	93	87
6	16	58.0	162.5	1,999	75	75
7	17	50.4	163.1	825	88	30
8	18	58.5	160.0	*	195	50
9	22	69.0	?	*	212	100

\* General unweighed diet

uncontrolled cases. The fasting blood sugar level of the juvenile cases has been uniformly high except when a nocturnal dose of insulin has been taken. In many cases we have intentionally allowed children to pass some sugar in the urine in order to prevent hypoglycemic shock while at school. Our margin is usually less than 10 Gm in the twenty-four hour specimen. Of the nine children, two have been admitted in coma, one twice and the other once. While some reduction in insulin dosage has been the rule, the amount of reduction is probably not of the magnitude indicated in the chart. Readmissions would naturally follow some break in the diet or some acute infection, with subsequent loss of tolerance.

It has been a real pleasure to note that the skeletal development of our children has not been appreciably retarded. Gray and Geyman<sup>7</sup> failed to note the retarding effect of diabetes on osseous development, described by Joslin and his co-workers.<sup>2</sup> Priesel and Wagner<sup>8</sup> also found normal development among their children. We are not prepared to claim that this improvement in osseous development is an exclusive virtue of the higher carbohydrate method, it is probably as much a result of feeding diets of greater caloric value. We suspect that when diets adequate in all nutritional requirements and insulin in appropriate amounts are employed, the

<sup>7</sup> Gray and Geyman. Unpublished data.

<sup>8</sup> Priesel, Richard and Wagner, Richard. Körperbau, Wachstum, und Entwicklung diabetischer Kinder. Ztschr. f. Kinderh. 41: 267 1926.

development of children will progress at a normal pace. One of the triumphs of insulin is that it makes nutritionally adequate diets possible.

In order to illustrate briefly the results obtained, we wish to present synopses of the records of a few of the cases listed in table 5. These four cases were once treated in the Santa Barbara Cottage Hospital with a high fat, low carbohydrate diet, and some comparison between the low carbohydrate period and the high carbohydrate period in the same person is possible.

CASE 1—C. C., a man, aged 63, with no familial incidence, had had diabetes since he was 49 (1918). Neuritis was the only complication. The patient's previous diseases had been tonsillitis, sinusitis and sunstroke.

In April, 1924, the patient weighed 69.7 Kg, and on a diet consisting of carbohydrate 91, protein 79 and fat 193, totaling 2,417 calories, the urine was sugar free with 120 units of insulin daily. He was then changed to a high carbohydrate ratio, and eight years later, in 1932, he weighed 66.8 Kg and showed no urine sugar on a diet containing carbohydrate 224, protein 84 and fat 121, totaling 2,401 calories, with 60 units of insulin daily.

In this particular case the carbohydrate content of the diet was more than doubled, yet the insulin dosage was cut in half.

CASE 2—B. H., a man, aged 27, no familial incidence, had had diabetes since he was 17 (1922). There were no complications, and there had been no previous diseases.

In June, 1923, the patient weighed 57.5 Kg and on a diet consisting of carbohydrate 77, protein 65 and fat 182, totaling 2,206 calories, the urine was sugar free with 171 units of insulin daily. Nine years later, on the high carbohydrate diet, the weight was 62.2 Kg and on a diet of carbohydrate 199, protein 98 and fat 107, totaling 2,151 calories the urine was sugar free with 30 units of insulin daily.

In this instance, on a diet of about the same caloric value the carbohydrate content was more than doubled, yet the insulin requirement was materially reduced.

CASE 3—Miss M. F., aged 38, had had diabetes since she was 30 (1922). There were no complications. There was a previous history of lipoma. One brother had diabetes.

In 1923, the patient weighed 52 Kg and on a diet consisting of carbohydrate 93, protein 80 and fat 219, totaling 2,663 calories, the urine was sugar free with 30 units of insulin daily. Three years later, in 1926, the caloric value of the diet had been reduced to 1,884 with carbohydrate 232, the urine contained 15 Gm of sugar with 70 units of insulin. In 1932 on approximately the same diet, the insulin requirement had fallen to 34 units.

CASE 4—Mrs. M. F., aged 69, had one sister who had died of diabetes. The patient had had diabetes since she was 59 (1923). There were no complications. There was a previous history of otitis media and sinusitis.

In January, 1925, the patient weighed 63 Kg, and on a diet of carbohydrate 93, protein 71 and fat 93, totaling 1,493 calories, the urine was sugar free without insulin. In 1925 the patient was sugar free on a high carbohydrate diet of carbohydrate 189, protein 78 and fat 94, totaling 1,914 calories, with 24 units of insulin daily. Seven years later the diet consisted of carbohydrate 178, protein 67, and fat 59, totaling 1,511 calories, and the patient, who now weighed but 1 Kg more, required 25 units of insulin daily.

#### COMMENT

In prescribing higher carbohydrate diets, no distinction has been made between the insulin and the non-insulin patients. Insulin has been prescribed only when the patient was unable to metabolize an adequate diet without persistent glycosuria or prolonged hyperglycemia. A preliminary period of undernutrition was practiced during the early part of the period covered by this study but has since been abandoned as unnecessarily

prolonging hospitalization. The diets prescribed have fallen into three general groups: (1) maintenance, (2) "weight-reducing" and (3) "weight-gaining." By a maintenance diet we mean one that will maintain body weight constant at a level about 10 per cent below the average allowed in actuary tables for age, sex and height. For adults, we have found 30 calories per kilogram of body weight sufficient. Many patients even maintain their weight for long periods of time on less without apparent detriment. Our children have received from 45 to 80 calories per kilogram of body weight, depending on their age.

As the average diets listed in table 3 indicate, we have used diet formulas containing 2 Gm of carbohydrate to 1 Gm of fat during the major part of the past seven years. For the past two years we have experimented with formulas having a carbohydrate to fat ratio of 3:1 and 4:1. Patients with mild diabetes have done well on such formulas, patients with severe diabetes have not. Even when low caloric diets such as reported by Rabinowitch<sup>9</sup> have been prescribed, 4:1 ratios have not in our experience proved satisfactory in severe cases. We have found high fasting blood sugar levels and disturbing hypoglycemic shock to be common. Since the appearance of the first report from this clinic, a number of American and foreign clinicians have reported their individual experiences with higher carbohydrate diets (Adlersberg and Porges,<sup>10</sup> Geyelin,<sup>11</sup> Barach,<sup>12</sup> Richardson,<sup>13</sup> Poulton,<sup>14</sup> Short,<sup>15</sup> Stolte,<sup>6</sup> Rabinowitch,<sup>9</sup> Don,<sup>16</sup> Nixon,<sup>17</sup> Himsworth,<sup>18</sup> Bang<sup>19</sup> and Thomas and Howard<sup>20</sup>). The common denominator of all these reports is the increased "feeling of fitness," mental alertness and physical vigor. That such desirable subjective values can be purchased at a moderate cost in insulin, our own observations and those of other clinicians demonstrate. Kestermann,<sup>21</sup> who has applied Stolte's "free choice diet" to adults, also reports an increased sense of strength and well being, together with improvement in the patient's tolerance. We approve in general of Kestermann's liberal use of carbohydrate in his diets (from 300 to 400 Gm). We have, however, been fortunate in the past few years in that only infrequently have we found it necessary to prescribe doses of insulin as large as he has.

A recent summary published by Adlersberg<sup>22</sup> presents his experience with the higher carbohydrate diet method and his evidence that improvement in tolerance, as measured by a reduction in insulin dosage or an

9 Rabinowitch I M. The Present Status of the High Carbohydrate Low Caloric Diets for the Treatment of Diabetes. *Canad. M. A. J.* 26: 141 (Feb.) 1932.

10 Adlersberg D, and Porges Otto. Weitere Erfahrungen über die Behandlung des Diabetes Mellitus mit fettarmer Diät. *Klin. Wchnschr.* 6: 2371 (Dec. 10) 1927. Ueber die Diätbehandlung der Zuckerkrankheit mit fettarmer Kost. *ibid.* 7: 1503 (Aug. 5) 1928.

11 Geyelin H R. Recent Studies on Diabetes in Children, *Atlantic M. J.* 29: 825 (Sept.) 1926.

12 Barach J H. Lower Fat Diet in Diabetes, *Ann. Int. Med.* 4: 599 (Dec.) 1930.

13 Richardson Russell. High Carbohydrate Diets in Diabetes Mellitus. *Am. J. M. Sc.* 177: 426 (March) 1929.

14 Poulton, E. P. High Carbohydrate Diets in Diabetes, *Lancet* 1: 351 (Feb. 14) 1931.

15 Short, J. J. A System of Weighed High Carbohydrate Diets for Diabetes. *J. A. M. A.* 96: 1940 (June 6) 1931.

16 Don, C. S. The Progress of Insulin Diabetes on a Liberal Carbohydrate Diet, *Brit. M. J.* 2: 52 (July 9) 1932.

17 Nixon J A. Advantages to the Diabetic of a Diet Rich in Carbohydrates, *Brit. M. J.* 1: 326 (Feb. 22) 1930.

18 Himsworth H P. Recent Advances in the Treatment of Diabetes. *Lancet* 2: 978 (Oct. 31) 1931.

19 Bang Olaf. Treatment of Diabetes with Diet Rich in Carbohydrate. *Verhandl. d. XIV. Nord. Kongress f. Inn. Med.* 1929, p. 25 and *Norsk. mag. f. laegevidensk.* 90: 1179 (Nov.) 1929.

20 Thomas, H. M., Jr. and Howard J E. High Carbohydrate Diet in Diabetes Mellitus. *Virginia M. Monthly* 59: 516 (Dec.) 1932.

21 Kestermann E. Zur Frage der frei gewählten Kost beim Diabetes Mellitus des Erwachsenen. *Ztschr. f. klin. Med.* 119: 727 1932.

22 Adlersberg D. Fettreiche oder fettarme Ernährung des Diabetikers? *A. Barth* 1932 reprinted from *Zentralbl. f. inn. Med.* 53: 401 (April 2) 433 (April 9) 1932.

increased diet, occurs when the fat content of the diabetic diet is reduced and the carbohydrate content is correspondingly increased. That such improvement in diabetic tolerance follows the prescription of a higher carbohydrate diet has been noted repeatedly by the authors mentioned. As yet, however, no satisfactory explanation of the mechanism by which this improvement occurs has been offered. Porges and Adlersberg<sup>10</sup> originally attributed it to a change from a liver rich in fat and poor in glycogen to one low in fat and rich in glycogen. Needless to say, this explanation, although highly attractive and stimulating, is purely theoretical. In his last publication, Adlersberg himself attributes little to it. An alternative hypothesis is that the taking of increased carbohydrate stimulates the secretion of endogenous insulin. Some evidence for this has been advanced by Porges and Adlersberg,<sup>10</sup> Sweeney,<sup>23</sup> ourselves<sup>24</sup> and others. If true, it might be possible, reasoning *a priori*, to stimulate the pancreas to the point of exhaustion. With this possibility in mind we have examined carefully the records of those cases in which the higher carbohydrate diet was known to have been followed for seven years. Among these patients, if in any, one might expect to find evidence of exhaustion. Most of the patients showed a gain in tolerance when this diet method was used. In the case of the children, this gain occurred in spite of gains in body weight up to 100 per cent of the original weight. Adlersberg has claimed that overfeeding *per se* is not detrimental to diabetic tolerance but that overfeeding with fat is. In test periods of a few months' duration he has caused patients to gain weight with a high caloric, high carbohydrate diet and still has reduced their insulin dosage. Table 5 presents evidence of essentially the same thing over a period of years. This seems to answer satisfactorily and affirmatively the question raised at the outset of this paper, that it is not only possible and practical but also advantageous to feed the diabetic patient a diet that approaches a normal carbohydrate-fat ratio.

Don<sup>16</sup> has recently reported on a group of sixty-one cases observed for from two to six years on diets providing up to 190 Gm of carbohydrate. In seventeen of these cases the dosage of insulin could be reduced, in twenty it had to be increased, while in twenty-four it was stationary.

An objection has been raised that the beneficial effect of this diet method is not the relative increase in carbohydrate but the relative reduction in fat. The observations of Czoniczer and Kolta<sup>25</sup> are the only ones that have come to our attention in which this question has been studied with equicaloric diets of constant protein content. These investigators found that the patient's tolerance rose equally well when liberal amounts of carbohydrate were permitted, whether very low or only moderately low (100 Gm) amounts of fat were employed. From this, one might assume that the relative increase in carbohydrate is the responsible factor.

#### SUMMARY

One thousand and five cases of true diabetes mellitus were treated with the higher carbohydrate diet method between Jan 1, 1925, and Jan 1, 1932.

23 Sweeney J. S. Dietary Factors That Influence the Dextrose Tolerance Test, *Arch. Int. Med.* 40: 818 (Dec.) 1927.

24 Gray P. A. and Sansum W. D. An Unusual Effect of a Carbohydrate-Rich Fat-Poor Diabetic Diet. Report of a Case. *Endocrinology* 15: 234 (May-June) 1931.

25 Czoniczer G. and Kolta E. Der Einfluss der kohlenhydratreichen Diät auf die Toleranz der Zuckerkranken. *Med. Klin.* 28: 752 (May 27) 1932.

Arteriosclerosis has been the chief single cause of death. The incidence of arteriosclerosis seems to be more closely related to the age of the patient than to the duration of the diabetes.

An improvement in sugar tolerance, as measured by either an increased diet or a reduced insulin dosage, was found in forty-two of seventy cases in which this diet had been used for seven years continuously. All patients reported a sense of increased well being and physical fitness.

317 West Pueblo Street

### IMMEDIATE PNEUMOCOCCUS TYPING DIRECTLY FROM SPUTUM BY THE NEUFELD REACTION

ALBERT B. SABIN, M.D.

NEW YORK

In recent years, pneumococcus typing has come to be a frequently performed clinical laboratory procedure. The definite indications for serum therapy in certain cases of lobar pneumonia render the determination of the type of invading pneumococcus essential in every case. The need for a simple, practical, rapid and reliable method has been recognized for a long time. Many methods of pneumococcus typing have been devised, but the one most commonly and successfully used was that in which the peritoneal exudate, obtained from a mouse on an average of from eighteen to twenty-four hours after injection of the sputum, was tested for agglutination with the various typing serums. In 1929, a stained slide microscopic agglutination method<sup>1</sup> was devised which was relatively more simple and rapid, giving results about three to five hours after injection of the mouse. This method has since been widely and successfully used. My purpose in the present communication is to introduce a method that is simple and reliable, that dispenses with the use of mice, and by which a correct determination of type is possible within a few minutes after a suitable specimen of sputum has been obtained.

As far back as 1902, Neufeld<sup>2</sup> observed that when pneumococci are mixed with specific immune serum there occurs in addition to agglutination a "quellung" (swelling) of the peripheral zone of the organisms. In 1929, I<sup>1</sup> was unable to demonstrate any specific change either in the microscopic appearance or the state of aggregation of pneumococci by mixing immune serum directly with the sputum; this failure, it appears now, was due partly to the fact that fixed instead of fresh preparations were studied and partly to the type of serum that was used. In 1932, Armstrong<sup>3</sup> and Logan and Smeall<sup>4</sup> in England reported simultaneously that, when sputum is mixed with immune serum and examined in the fresh state, one can observe the specific "quellung," described by Neufeld, and that pneumo-

From the Third (New York University) Medical Division of Bellevue Hospital and from the Department of Medicine, University and Bellevue Hospital Medical College, New York University.

1 Sabin A. B. The Stained Slide Microscopic Agglutination Test. Application to (1) Rapid Typing of Pneumococci (2) Determination of Antibody Proc. Soc. Exper. Biol. & Med. 26: 492 (March) 1929. The Microscopic Agglutination Test in Pneumonia. *J. Infect. Dis.* 46: 469 (June) 1930.

2 Neufeld F. Ueber die Agglutination der Pneumokokken und über die Theorien der Agglutination. *Ztschr. f. Hyg. u. Infektionskr.* 40: 54 1902.

3 Armstrong R. R. Immediate Pneumococcal Typing. *Brit. M. J.* 1: 187 (Jan 30) 1932.

4 Logan W. R. and Smeall J. T. A Direct Method of Typing Pneumococci. *Brit. M. J.* 1: 188 (Jan 30) 1932.

coccus typing could thus frequently be performed within a few minutes. Several competent bacteriologists in this country attempted to use their method, in which sputum and serum are mixed on a slide, covered with a cover slip and examined with the high power lens (Armstrong) or the oil-immersion lens (Logan and

wards of Bellevue Hospital. The sputum was obtained from the patient by me in each instance, and the typing was performed almost immediately thereafter. In view of the fact that from a therapeutic standpoint it was essential to know chiefly whether or not the cases were type I or type II pneumococcus pneumonias, and also because rabbit serums<sup>5</sup> for these two types only were available at the time, these were the only ones for which the sputums were examined. The results were checked with those obtained by the mouse methods in the bacteriologic laboratory of Bellevue Hospital.

#### METHOD

Two small flecks of sputum are placed on a cover slip (about 22 by 50 mm) with a platinum loop, the diameter of which preferably does not exceed 2 mm. When the sputum is very tenacious, as it frequently is, it may be necessary to use another wire for getting the sputum off the loop. To each bit of sputum an equal quantity of the undiluted rabbit serum (type I serum to one, and type II serum to the other) and a loopful of standard alkaline methylene blue was added. A special deep, large, hollow-ground glass slide, big enough to cover both drops, was used; this special slide is convenient but not essential. The edges of the slide are smeared with petrolatum, it is placed over the cover slip, and the preparation is inverted. The examination is made with the oil-immersion lens and an artificial blue light. Although the reaction occurs almost immediately, it is best to delay the examination for about two minutes to allow for proper diffusion of the serum.

It is important to observe that ordinarily, in the hanging drop preparation, pneumococci in sputum show no capsules, occasionally a faint halo of light but without any definite outline may be seen about the organism.

Fig 1—Type II pneumococcus in sputum mixed with type I anti serum (rabbit) no quellung

Smeall), but with little success. Some of the difficulties that were encountered were (a) the absence or small number of pneumococci in these preparations as well as the difficulty in finding them and (b) the rapid drying and frequent lack of specificity. Recently, Dr Kenneth Goodner of the Hospital of the Rockefeller Institute for Medical Research in New York observed the method as it is carried out in Professor Neufeld's laboratory of the Robert Koch Institute in Berlin, used it successfully himself in several cases and kindly demonstrated it to me. The technic differed from that of Armstrong and of Logan and Smeall in that the mixture was stained with methylene blue, to facilitate the detection of the micro-organisms, and was examined in a hanging drop instead of spread out in a cover slip preparation. After several trials in the laboratories of the Third (New York University) Medical Division of Bellevue Hospital had been successfully performed, this study was undertaken to investigate the factors that would make the procedure more uniformly reliable and practicable. Preliminary tests revealed that the following considerations were of great importance: (1) The horse antipneumococcus serums commonly used for typing were unsuitable for this method because they frequently gave nonspecific reactions, these nonspecific reactions could not be eliminated by dilution of the serum, since the "quellung" phenomenon occurs best with undiluted serum, (2) carefully prepared rabbit serum gives absolutely specific reactions, (3) whereas crystal violet or Wright's stain fails to stain the pneumococci in this preparation, alkaline methylene blue gives excellent results, and (4) the sputum should be typed not later than one to two hours after it is coughed up, because the pneumococci autolyze very rapidly.

With these considerations in mind, the method was applied to 100 cases of lobar pneumonia in the medical

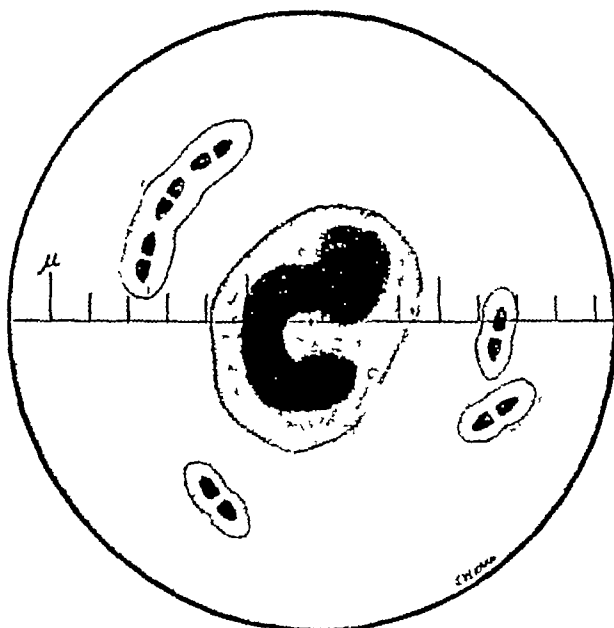


Fig 2—Type II pneumococcus in sputum mixed with type II anti serum (rabbit) 'quellung' reaction.

However, in the type-specific mixtures of sputum and serum one finds the pneumococci surrounded by peripheral zones of characteristic appearance and distinct

5 The author is indebted to Miss Georgia Cooper of the Research Laboratories of the New York City Department of Health for the rabbit serums. These serums had been kept without a preservative for over three years to prevent contamination, 0.5 per cent phenol was added to them during the course of this work.

outline This peripheral zone consists of a refractile substance which does not take the stain and which may be described as having a ground-glass appearance, the organism within it is stained blue The size of this zone of "quellung" varies in different sputums with organisms of the same type, generally, type II pneumococci presented the larger zone It is important to stress, however, that it is not so much the size of the zone as its characteristic appearance which determines a positive reaction It is also necessary to state that this reaction does not depend on agglutination of the pneumococci, although it occasionally occurs in the sputum, but on the appearance of the individual organisms, furthermore, this appearance is so characteristic that the finding of even a single diplococcus which shows it is sufficient to diagnose the type, as shown in the accompanying illustrations

#### RESULTS

Of the 100 patients who were typed by this procedure, 31 had type I pneumococcus, 22 had type II, and 47 had neither type I nor type II in their sputums There was not a single case of lobar pneumonia in which type I or type II pneumococcus was found by the mouse-inoculation methods that was not also found to be of the same type by this method of direct examination of the sputum In two instances, however, a type I pneumococcus was found by this procedure when no type was obtained by the older methods This method appears to be so specific that, when definitely positive, the results obtained by it should receive the greatest consideration Of the forty-seven sputums that contained neither type I nor type II pneumococci by the direct method, five were found to have type V, four type III, three type XIV, two each types IV, VII, VIII and XIII, and the remainder were scattered among the other types and the unclassified group of pneumococci, when tested by the mouse-inoculation methods It speaks well for the specificity of the direct method that not a single cross reaction occurred with any of these types, particularly so in the case of type V, which was formerly known as type IIa of Avery and which is closely related to the type II pneumococcus It is important to note also that ten of the thirty-one type I sputums and six of the twenty-two type II sputums were not of the typical "rusty" or "prune juice" variety, typical reactions for type I and type II pneumococci were obtained in a few almost purely salivary specimens The sputums of six patients who came to the hospital within from twenty-four to thirty hours after the onset of type I pneumococcus pneumonia presented in each instance sufficient pneumococci to permit an immediate determination of type, it is perhaps interesting to note that serum therapy was spectacularly effective in each of these patients

#### SPUTUM OF PATIENTS SUCCESSFULLY TREATED WITH SERUM

Shortly before, at or shortly after the time of crisis in many of the patients successfully treated with serum (only cases of type I and type II pneumococcus pneumonia, in all of which serum was given were observed), either the sputum on direct examination by this method was found to contain no pneumococci or else lancet-shaped diplococci were seen which did not give the "quellung" reaction In tests on pneumococcus broth cultures it was observed that the organisms, shortly before undergoing autolysis, also failed to give

the "quellung" reaction Whether the lancet-shaped diplococci in the sputums already referred to were in that state or whether they represented different types of organisms cannot be stated It is necessary to point out, however, that persons desiring to familiarize themselves with this method had best not use such specimens of sputum

#### THE NATURE AND BIOLOGIC SIGNIFICANCE OF THE "QUELLUNG" PHENOMENON

In the early work on the "quellung" or swelling of the peripheral portion (capsule?) of pneumococci, Neufeld observed that the phenomenon required neither complement nor living organisms and that it did not lead to bacteriolysis It has been generally assumed, therefore, that the "quellung" represented an antigen-antibody reaction on the periphery of the organism of the same nature as that which precedes agglutination However, in this study certain important differences were found to exist Thus, a serum which could agglutinate in a dilution of at least 1:200 produced the "quellung" phenomenon irregularly in a dilution of 1:5 and not at all in a dilution of 1:10, even when normal or heterologous immune serum was used as a diluent, furthermore, an undiluted serum produced agglutination on a species-specific basis without any associated "quellung" of the pneumococci On the other hand, an undiluted serum failed to agglutinate because of a "zone phenomenon" but gave the "quellung" reaction nevertheless Pneumococci agglutinated by a dilute serum exhibited the "quellung" phenomenon on the addition of the undiluted homologous rabbit serum but not on the addition of the heterologous serum Larger "quellung" zones were observed with pneumococci in sputum than with those in the peritoneal exudate of a mouse, the latter, in turn, showed larger zones than the organisms in a broth culture The "quellung" of pneumococci in broth cultures was greatest early in their growth, diminished as the period of incubation increased, and shortly before they underwent autolysis (usually on the third or fourth day of incubation) showed no "quellung" at all When autolysis was prevented by heating the culture or exudate at 60°C for forty-five minutes, the organisms retained their "quellung" capacity for a long time A consideration of these various factors suggests that the "quellung" phenomenon involves something more than a mere combination of antibody with the organism In a recent publication, Ettinger-Tulczynska<sup>6</sup> maintains that the "quellung" phenomenon represents a visualization of the natural capsule as a result of the precipitate that forms on it following the union of the capsular substance with the specific antibody, she was able to simulate this phenomenon, nonspecifically, by the addition of various precipitating salts to pneumococci Whereas this explanation appears plausible, it does not account for the fact that dilutions of serum which are capable of precipitating the so-called capsular substance are incapable of producing the "quellung" phenomenon

#### SUMMARY

The type of invading pneumococcus in lobar pneumonia can be determined directly from the sputum within a few minutes by a method that makes use of Neufeld's "quellung" phenomenon

Twenty-Sixth Street and First Avenue.

6 Ettinger-Tulczynska R. Bakterienkapseln und Quellungsreaktion. Ztschr. f. Hyg. u. Infektionskr. 114:769, 1933

## THE TREATMENT OF POLIOMYELITIS

PREVENTION OF DEFORMITY AND PROTECTION  
OF MUSCLESJOHN RUHRAH, M D  
BALTIMORE

Jacob Heine, in 1840, in outlining the treatment of the deformities caused by poliomyelitis, recommended braces and the training of muscles. In his second edition, in 1860, he touched on the prevention of deformity. This, the paramount importance of rest, the protection of muscles from stretching and from the disastrous effects of fatigue, was fully discussed as to both principle and detail by Charles Fayette Taylor, in 1867. Hugh Owen Thomas, Sir Robert Jones, C. L. Lowman, Jean Macnamara and others have stressed these points, but deformities still occur and muscles continue to be damaged because this exact knowledge is not generally applied. Lovett, who was a great exponent of exercise, came to the conclusion that rest was the most important factor in treatment. One might say that the muscle paralyzed by poliomyelitis should be treated with the same care as a fracture as long as there is hope of improvement, together with the suggestions to be given.

It must be remembered that, while the primary lesion is in the nerve cells, secondary changes occur in the muscle fibers, and if these are stretched the fibers will be badly damaged, so much so that the muscle which would function eventually may be permanently paralyzed. This was well known in the 1860's but has largely been lost sight of. To give nature a chance to repair the damage and to prevent further injury, the muscles must be kept at rest in a position that will insure the greatest amount of recovery, which is when the attachments are brought as close together as possible, points brought out by Taylor in 1867. These two things are the basis of all rational therapy. Everything else may be looked on as secondary.

It must be borne in mind that the tendency in poliomyelitis is toward recovery and that, while there will be some residual paralysis in a proportion of cases, many muscles are needlessly sacrificed through neglect or improper treatment.

The principles of the management of the disease as I, a victim of it, see them, apart from any specific treatment with serum, may be stated as follows:

1 Deformity may be prevented. A start should be made as soon as possible. The patient is placed on a firm mattress with boards set transversely under it if necessary. Pillows should not be used under the legs. The patient should be kept recumbent in a suitable splint which will help relieve the acute pain so often present at the onset. The patient will welcome the relief and so become accustomed to the restraint. If not started at the onset, it should be done as soon as possible.

The nature of the splint, of course, will depend on the location and extent of the paralysis, but the main point to be remembered is that man is an erect animal and that the two muscle groups especially developed to enable him to stand erect, so differentiating him from the ordinary quadruped animals, are the glutei and the quadriceps. These muscles should therefore always receive especial attention, and they will be conserved best by keeping the patient, while recumbent, in the position he would be in if standing. As Taylor puts it,

If the patient has been carefully attended, so that no damage is done by faulty positions while in a state of muscular atony, there will be no difference in the rate of recovery, nor will there be shortening or lengthening of the different muscles, and the patient can begin to stand and walk at a much earlier stage, and with much less strength, than when a small amount of shortening has been allowed to take place. The reason for this is that the least contraction of the flexor muscles will at once throw the patient out of his natural position, and the weight of the body must be held entirely by the force of the muscles instead of resting on the bony framework, with only sufficient muscular aid to keep it erect.

A modified double Thomas frame splint made to extend from head to foot can be used to maintain the body in line so that eventually, when the splint is discarded, the patient will be able to stand erect, assuming that he will have recovered sufficient power to do so. Macnamara<sup>1</sup> gives the details of such a frame splint, which includes thoracic and pelvic bands, a corset to support the abdominal muscles, and adjustable arm and foot pieces. In place of this, other devices of plaster or metal may be used as well as sand-bags for adults. All splints must be used with thought.

Great care should be exercised in preventing slight deformities from the irregular return of muscle power. The line between the anterior superior iliac spines should be at right angles to the line passing straight down through the center of the body. The weaker muscles should be relaxed by position to prevent stretching by stronger opposing ones, for example, the quadriceps by keeping the leg extended but not so as to cause hyperextension. It should be remembered that the causes for subsequent deformity develop early, and prevention should start at once. The trunk muscle abdominals and the hip extensors are usually neglected with appalling results. The glutei and the quadriceps should always be kept in mind.

2 Relaxation and rest are the most important factors in treatment. Fatigue, both general and local, must be guarded against. The patient's sensations are not a good guide. An amount of fatigue, dangerous alike to nerve centers and muscles, may not be noted until it is too late. Fatigue from exercise must be carefully watched for, as noted under muscle training.

3 The muscles must be protected. Overstretching a normal muscle will paralyze it temporarily and overstretching a paralyzed muscle may damage it permanently. The stretching may be due to the force of gravity, as in the examples of the deltoid, the quadriceps and the tibialis anticus. This stretching may be due also to the pull of stronger antagonistic muscles. Both of these forms may be prevented by the use of properly adjusted splints changed from time to time to suit existing conditions. Much injury may be done by allowing the patient's arms or legs to dangle in handling him. A muscle will recover its power more quickly and completely in complete relaxation than in any other position. A relatively weak muscle may in this manner become stronger than the one which originally opposed it, and a change in splints must be made accordingly.

4 Contractures must be prevented. Contractures are due to shortening in unopposed and relaxed muscles, tendons and fascia. Proper splinting and the daily bath at which time proper passive exercises may be undertaken, will prevent them.

Muscles should never be allowed to stretch while the child is being moved or while treatment is being given. This should be limited at first to daily warm baths,

when tenderness and pain pass, a program of very gentle massage, and a very little passive motion, to be replaced by voluntary exercise under supervision as outlined, may be undertaken

Muscle training can be carried out on a table on a Mackenzie board, that is, the legs or arms may be exercised on a suitably sized smooth board well powdered, placed on pillows or under water. The exercises are done first on a flat surface with gravity eliminated, later the board may be inclined, still later, gravity may be allowed to a greater extent. In the water the physical therapist, if necessary, supports the limb that is being exercised.

The exercise is started with very little motion, one or two movements, and gradually increased. If the muscle fails to make the movement easily, a sign of fatigue, the exercise should be stopped and the rest period awaited.

5 At first the more important muscles should be favored until their recovery is assured. These are the deltoids, the extensors of the wrist, the opponens of the thumb, the glutei, the quadriceps, the calf muscles, the invertors of the foot and the abdominal muscles.

6 Muscles may be reeducated and strengthened by suitable exercise. In the early stages a daily warm saline bath will be all that is needed. Later, when the pain and tenderness have passed off, a small amount of daily exercise may be given. In America, this treatment has been overdone and the measures to insure the fundamental protection have been overlooked.

If a movement cannot be made voluntarily, it should be made passively and the patient encouraged to will it. The value of volition in muscle training was stressed by John Hunter in the eighteenth century and by Roth in 1869, among others. A weak muscle may be assisted. A muscle should never be permitted to become fatigued. During the exercise it should be seen that the other muscles are protected.

The advantage of under-water treatment is that gravity, i. e., the weight of the limb, is largely eliminated, the patient can make volitional movements impossible in the air. May complete motions, learns coordination, and gains in confidence and morale, a factor that only one who has been through it can appreciate. The arc of motion should in all exercises be completed either with or without assistance. The use of "trick" movements or "cheating," in which the patient produces the movement by using another group of muscles than the one ordinarily used, should not be permitted.

7 The exercise given must always be well within the capacity of the muscles. The exercise must not be by rule of thumb but should be regulated each day, for each patient and for each muscle group.

8 The treatment should be individual and modified from time to time to suit conditions as they arise.

9 The muscles should be protected and trained as long as there is any improvement.

10 When muscles of the trunk and legs are involved, weight bearing should not be allowed while improvement is going on if the aim is to achieve all the recovery possible, but only after it has come to a standstill.

The time to let the patient up is always a question. Macnamara continues a regimen of accurate splinting in the recumbent position as long as there are signs of improvement. After a year, if there is no evidence of further improvement, suitable braces may be supplied and the training directed to securing the best possible result as to function. Prolonged treatment often avoids the use of braces later.

11 Warmth is useful. The muscle should be warmed before exercise. Dry heat may be applied in tents or boxes fitted with carbon bulbs, improved appliances or other means. Fresh air, sunlight and ultraviolet rays in properly graduated doses are of value in improving the general condition. Massage, if used, should be gentle and, if there is any tenderness, avoided.

Warm baths are most useful and are gratifying to the patient. A warm bath, preferably of salt water, should be given daily. Small children may be bathed in a tub, the muscles being supported during the bath and care being taken to avoid the dangling of limbs in handling the child. Macnamara<sup>2</sup> advises bathing adults in bed by placing a rubber sheet under them and pinning it with clothes-pins to boards hinged to the sides, and foot of the bed and over pillows to the back. The water is drained out by pulling a part of the sheet through a hole in one of the boards. When not in use, the boards are dropped to the side of the bed. Any good mechanic can attach gadgets to the bed to hold strong wires to be used for this purpose.

12 The morale of the patient should be kept up. The child should not be humored or spoiled, self pity will down the strongest. Those around poliomyelitis patients should remember the saying of Dr. John Brown about pity ceasing as an emotion and becoming a motive. Suitable amusements for young and old, education by mail or by teachers, games, radio, music and visitors help to pass the hours. An unoccupied person cannot be expected to be happy. Too often patients are allowed to stew in their own mental juices to their great detriment. Education, diversion or visiting should not be overdone. Proper mental rest is as essential as physical rest but, as the Scotch saying goes, "It is possible to get too much pork for a shilling."

#### SUMMARY

In managing patients paralyzed by poliomyelitis, one should bear in mind that deformity is preventable, rest is essential as long as there is hope of improvement in muscle power, the muscles must be protected from damage by stretching and fatigue, a muscle placed at rest in a position of relaxation, i. e., with the attachments brought as close together as possible, will recover sooner and more completely, the patient should be kept recumbent (in proper line, i. e., in the same alignment as if standing erect), weight-bearing is not to be allowed while recovery is occurring if the best results are to be obtained, and much of the crippling resulting at present may be avoided.

11 East Chase Street

2 Macnamara, Jean. *Canad. Pub. Health. J.* 23: 517 (Nov.) 1932

**The Gold Content of Sea Water**—When the World War was over and the victors imposed upon Germany the task of finding enormous sums for "reparations," Fritz Haber proposed to himself the most interesting scheme of extracting gold from the inexhaustible reservoir of the oceans. Previous determinations by other investigators had placed the gold content of sea water at five to ten milligrams of gold per metric ton (one thousand kilograms) of water. The gold ores of South Africa contain about one thousand times more gold per ton than does sea water, but the greater ease of working water, as compared with rigid rock, made the task seem very promising. The plan itself did not succeed and could not succeed. Instead of the assumed gold content of five to ten milligrams per ton, Haber's numerous experiments showed only about one thousandth as much. But they accomplish a great advance in the analytical methods for separating out minute amounts of material—Hahn, Otto. From the Ponderable to the Imponderable, *Science* 77: 398 (April 28) 1933.

APOMORPHINE AS AN ANTIDOTE TO  
STRYCHNINE POISONINGDAVID GOLD, B A  
AND  
HARRY GOLD, M D  
NEW YORK

In the course of another study the observation was made that a combination of morphine and apomorphine in very small doses, which by themselves produced no appreciable depression, gave rise to an unusual degree of motor fatigue. Experiments were then planned to determine whether this action might prove useful in antagonizing the actions of strychnine, in view of the recent report by Haggard and Greenberg<sup>1</sup> that in dogs and rats convulsions are diminished and recovery

dogs. Unless it can be shown that apomorphine is fairly consistently effective against strychnine poisoning it might prove disastrous to place reliance on a dose of apomorphine which is usually much more readily available in practice than the effective methods for the treatment of strychnine poisoning which have come into vogue during the past few years.

Experiments were designed to ascertain (1) whether apomorphine would diminish the reflex excitability caused by nonfatal doses of strychnine, and (2) whether apomorphine would prevent paralysis of respiration after doses of strychnine that are fatal for normal animals. In some cases in which it was possible, the same animal was employed for more than one experiment.

Sixteen experiments were carried out on eleven dogs. Strychnine sulphate and apomorphine hydro-

TABLE 1—Results of Study of Antagonism Between Apomorphine and Strychnine

Date	Dog	Apomorphine Hydrochloride Mg per Kg Intraperitoneally	Effect of Apomorphine	Strychnine Sulphate Mg per Kg Intraperitoneally	Result	Comment
12/26/32	8	10	No vomiting	0.53†	Death in 40 min	Strychnine 0.35 mg at 11 51 marked hyperexcitability at 12 01 0.18 mg of strychnine at 12 08 convulsion at 12 09 10 mg of apomorphine at 12 10 convulsions continued until respiration ceased at 12 46
12/29/32	6b	10	No vomiting	0.7†	Death in 17 min	Strychnine 0.7 mg at 10 11 caused convulsion at 10 17 10 mg of apomorphine at 10 18 convulsions continued until respiration ceased at 10 28
12/26/32	2	10	Vomiting	0.7	Death in 10 min	Apomorphine at 10 44 strychnine at 10 46 convulsions appeared at 10 50 respiration ceased at 10 56
12/24/32	1	10	Vomiting excitement	0.7	Death in 13 min	Apomorphine 5 mg at 12 44 strychnine at 1 31 convulsions appeared at 1 37 a second dose of 5 mg of apomorphine at 1 41 (no vomiting) respiration ceased at 1 44
12/29/32	8b	10*	Vomiting	0.7	Recovery in 139 min	Apomorphine 5 mg at 11 44 strychnine at 11 06 convulsions appeared at 12 09 second dose of 5 mg of apomorphine at 12 12 (no vomiting) convulsions still present at 12 39 complete recovery at 2 15
1/4/33	10b	10	Vomiting	0.7	Death in 46 min	Apomorphine 5 mg at 2 01 strychnine at 2 17 convulsions appeared at 2 33 second dose of 5 mg of apomorphine at 2 47 convulsions continued until respiration ceased at 3 03
12/29/32	10a	5	Vomiting	0.7	Recovery in 123+ min	Apomorphine at 2 16 strychnine at 2 23 convulsions appeared at 3 02 slight hyperexcitability still present at 4 31
12/29/32	11	5	Vomiting marked depression	0.7	Death in 26 min	Apomorphine at 3 50 strychnine at 4 04 convulsions appeared at 4 15 respiration ceased at 4 30
12/27/32	5	0		0.35	Recovery in 67 min	Strychnine at 3 02 marked hyperexcitability at 3 12 (no convulsion at any time) complete recovery at 4 09
12/28/32	6a	0		0.35	Recovery in 113 min	Strychnine at 10 12 convulsions at 10 28 complete recovery at 12 05
12/28/32	7a	0		0.35	Recovery in 102 min	Strychnine at 11 00 marked hyperexcitability at 11 33 (no convulsions at any time) complete recovery at 12 42
12/28/32	8a	0		0.35	Recovery in 72 min	Strychnine at 1 35 slight hyperexcitability at 2 10 (neither convulsions nor marked hyperexcitability at any time) complete recovery at 2 50
12/28/32	9	0		0.35	Recovery in 169+ min	Strychnine at 2 08 marked hyperexcitability at 2 15 (no convulsions at any time) almost complete recovery at 4 57
12/27/32	4	10	Vomiting	0.35†	Recovery in 99+ min	Strychnine 0.35 mg at 11 20 caused a convulsion at 11 35 10 mg of apomorphine at 11 36 slight reflex hyperexcitability still present at 12 50
12/29/32	7b	0		0.7	Death in 38 min	Strychnine at 10 19 convulsions appeared at 10 38 respiration ceased at 10 57
1/3/33	8c	0		0.7	Death in 37 min	Strychnine at 2 06 convulsions appeared at 2 20 respiration ceased at 2 45

\* Apomorphine was given in two doses in these cases. In all others apomorphine was given in one dose.

† In these cases the strychnine was given before the apomorphine. In all others the apomorphine was given first.

occurs after the administration of more than the single fatal dose of strychnine when the animals are treated with apomorphine, and in view of Dr Martin's report, quoted by these authors, indicating that similar results can be obtained in man.

In preliminary experiments the combination of morphine and apomorphine in very small doses proved entirely ineffective against strychnine poisoning, and the plan was not pursued further, but in one experiment a very large dose of apomorphine also proved ineffective. This suggested the need of confirming the report of Haggard and Greenberg, especially because the conclusion regarding the effectiveness of apomorphine appears to have been based on the recovery of only two

chloride were used in 1 per cent solutions. Both drugs were injected intraperitoneally. The doses in all cases were calculated in terms of milligrams of the drug per kilogram of body weight. The results in some detail have been summarized in table 1.

Haggard and Greenberg accepted 0.7 mg of strychnine (sulphate?) per kilogram as the surely fatal dose by intraperitoneal injection in the dog. They injected 1 grain (64.8 mg) of apomorphine, which we assumed to be the total dose for their dogs, but since they did not state the weight of their animals, we assumed that dose to represent about 5 to 10 mg of the drug per kilogram of body weight. They gave the strychnine first and the apomorphine when hyperexcitability or convulsions appeared. In the two dogs in which we proceeded in this way, convulsions continued uninfluenced by the apomorphine until death in forty and

From the Department of Pharmacology, Cornell University Medical College.

<sup>1</sup> Haggard H W and Greenberg L A. Antidotes for Strychnine Poisoning. J A M A 98 1133 (April 2) 1932.

seventeen minutes respectively after the strychnine (dogs 3 and 6b). In the first of these the fatal dose of strychnine was only 0.53 mg per kilogram.

In the remaining experiments the apomorphine was given in one dose prior to the strychnine or in two doses, 5 mg at varying intervals before the strychnine and 5 mg after symptoms of strychnine poisoning appeared. The apomorphine caused vomiting in all instances except the two in which strychnine convulsions were produced before the apomorphine was given. It also produced periods of marked motor unrest during which the animal paced about the room continuously, alternating with periods of motor weakness during which the animal refused to stand and lay with the legs sprawled out. In some cases this modified somewhat the reaction during strychnine poisoning, namely, the animal made more frequent attempts to rise, precipitating convulsions, and exaggerated motor depression occurred between the convulsions.

Table 2 shows the effect of 0.35 mg of strychnine sulphate in each of six dogs. The maximum effect of the same dose varied considerably in different animals, from slight hyperexcitability to convulsions, and complete recovery required from sixty-seven minutes to more than a hundred and sixty-nine minutes. In the one dog of this series (dog 4) that was treated with apomorphine the hyperexcitability continued uninfluenced, and recovery took place no sooner than in the untreated animals. The experiments of the next series confirm the observation of the absence of any antispasmodic effect of apomorphine.

Table 2 also shows the effects of a uniform dose of 0.7 mg of strychnine sulphate in dogs receiving apomorphine. This dose of strychnine caused typical convulsions in all these animals, and death in six of eight experiments in which apomorphine as well was administered. In one case (dog 8b) the animal

recovered from such a dose may at another time succumb to it.

CONCLUSIONS

The results of these experiments lend no support to the statement by Haggard and Greenberg that apomorphine controls strychnine convulsions in dogs and permits recovery from approximately twice the lethal dose of strychnine. Our results in a larger series of experiments show, on the contrary, that there is no appreciable antagonism between apomorphine and strychnine in dogs, that the reflex hyperexcitability from nonfatal doses of strychnine is not diminished and that death from doses fatal to untreated animals is not prevented by the administration of apomorphine. Possible sources of error that may indicate an antagonism between the two drugs are pointed out, namely, considerable variation in the degree of hyperexcitability after similar doses of strychnine in different dogs, as well as differences in susceptibility of the same dog at different times.

PERNICIOUS ANEMIA AND TUBERCULOSIS IS THERE AN ANTAGONISM?

A REVIEW OF THE OCCURRENCE OF TUBERCULOSIS IN NINETY-THREE CASES OF PERNICIOUS ANEMIA AS FOUND IN 16,600 POSTMORTEM EXAMINATIONS WITH A REPORT OF TWO CLINICAL CASES

MOSES BARRON, M.D.  
MINNEAPOLIS

Observers are almost unanimous that patients suffering from pernicious anemia remain practically free from active tuberculosis. In fact, so infrequent is the association of these two diseases that most of the textbooks on pathology and hematology as well as on clinical medicine do not even discuss it, and, in talking over this matter with clinicians as well as with pathologists of wide experience, I have been impressed with the fact that they have practically never encountered instances of such association. What is even more striking is the absence of material on this subject in the English literature and the scarcity of it also in the foreign literature. It is for this reason that I consider it a rare opportunity to have encountered two such cases, which I shall attempt to present, together with a review of what little is available in the literature.

REVIEW OF LITERATURE

Mathias<sup>1</sup> cites the pathologic statistics from Breslau in which not a single case of active tuberculosis was found in all the pernicious anemia cases. In his own carefully studied series of thirty-six cases of pernicious anemia there was not a single instance of active tuberculosis present. He considers this freedom from tuberculosis in pernicious anemia so striking that he asks for the experience of other observers in regard to this matter. He points out that this apparent antagonism is the more notable since, as Rokitsky has shown, cases of chronic malnutrition—diabetes, malignant growths and cachectic states—usually predispose to the activation of dormant tuberculosis. Mathias suggests

TABLE 2—Results with Two Different Dosages of Strychnine Sulphate

Animals Receiving 0.35 Mg of Strychnine Sulphate				Animals Receiving 0.7 Mg of Strychnine Sulphate			
Dog	Apo-morphine Hydrochloride, Mg per Kg	Effect of Strychnine	Recovery Minutes	Dog	Apo-morphine Hydrochloride, Mg per Kg	Result	
8a	0	Slight hyper excitability	72	1	10	Death	
5	0	Marked hyper excitability	67	2	10	Death	
7a	0	Marked hyper excitability	102	3*	10	Death	
9	0	Marked hyper excitability	109+	6b	10	Death	
9a	0	Marked hyper excitability	109+	7b	0	Death	
9a	0	Convulsion	113	8b	10	Recovery	
4	10	Convulsion	99+	8c	0	Death	
				10a	5	Recovery	
				10b	10	Death	
				11	5	Death	

\* Received only 0.53 mg of strychnine sulphate

recovered from 0.7 mg of strychnine sulphate when given 10 mg of apomorphine, five days later a similar dose of strychnine without the apomorphine was fatal (dog 8c). It indicated the possibility of a protective action of the apomorphine. This interpretation was vitiated, however, by the observation in another animal in which recovery from 0.7 mg of strychnine sulphate occurred when 5 mg of apomorphine was given, but a similar dose of strychnine given six days later was fatal, although even a large dose of apomorphine was administered, namely, 5 mg before the strychnine and 5 mg after strychnine convulsions appeared (dogs 10a and 10b). It is evident, therefore, that 0.7 mg of strychnine sulphate, while usually fatal, is not uni-

From the Department of Medicine University of Minnesota Medical School.  
Read before the Minnesota Society of Internal Medicine Minneapolis May 15, 1933.  
1. Mathias Ernst Ueber das freibleiben perniziöser Anämien von der Tuberkulose der Kachektischen Deutsche med. Wchnschr 52 2190 (Dec. 24) 1926

that perhaps the oxygen deficiency resulting from the anemia precludes tuberculous activity

Neuburger<sup>2</sup> hints at the possibility that the excessive erythrocytolysis might act as an inhibitory factor against tuberculosis but at the same time tries to point out the fallacy of such an assumption by citing the relative frequency of tuberculosis in congenital hemolytic jaundice, in which erythrocytolysis is even more pronounced. He reports a case of congenital hemolytic anemia in which the patient died of extensive tuberculosis. He believes that there is probably some constitutional factor which, while predisposing to the development of the anemia, at the same time produces a refractoriness to tuberculosis. This concept would place pernicious anemia as a distinct entity which already exists in the patient long before any clinical manifestations of the disease develop.

Berger<sup>3</sup> similarly states that the debris of excessive erythrocytolysis cannot explain the rarity of the combination. He cites an interesting case of pernicious anemia developing six years after subtotal gastrectomy for carcinoma. There were characteristic exacerbations and remissions during a period of three years with the usual blood picture, neurologic changes and achylia. Under liver therapy and hydrochloric acid the anemia improved, but during one of these remissions the patient developed generalized milary tuberculosis and died.

Qvarnström<sup>4</sup> is not entirely in accord with the preceding authors and concludes from his careful studies that there is neither a predisposition nor an antagonism between pernicious anemia and tuberculosis. He believes that each disease seems to run a course entirely independent of the other. He cites two cases in which the two diseases coexisted. In a series of 10,500 autopsies at Helsingfors, performed between 1886 and 1929, there were found 124 cases of pernicious anemia, of which 33 were associated with the fish tapeworm. In these 124 cases, 5 showed active tuberculosis and 7 showed healed lesions. He seems to find no difference between idiopathic pernicious anemia and the anemia of fish tapeworm in their relation to tuberculosis and therefore did not attempt to separate them.

Strandell<sup>5</sup> made an intensive study of pernicious anemia in a series of 117 cases carefully followed during a period of many years. In this series he found four cases of active tuberculosis superimposed on pernicious anemia, but only one showed active pulmonary tuberculosis, the others being intestinal, peritoneal and generalized milary tuberculosis. He concludes that the association of the two diseases is very unusual.

From this brief review of the literature it is evident that the coexistence of the two diseases is exceedingly rare. Most of the authors sense an antagonism between the two diseases but have difficulty in explaining the basis for it. That the oxygen deficiency theory is untenable is proved by the fact that tuberculosis does not develop either in the period preceding the onset of severe anemia or during the long remissions, when the oxygen content in the blood is normal. Neither is there any good foundation for the assumption that the cellular debris resulting from excessive hemolysis prevents the growth and development of the tubercle bacillus, for, as previously mentioned, tuberculosis does

occur in congenital hemolytic jaundice. Qvarnström<sup>4</sup> is the only one who believes that he found neither antagonism nor predisposition, but since his studies are from Finland, where infestation with the fish tapeworm is so very common, it is quite likely that the relative frequency of association of tuberculosis with anemia might be explained by the fact that many of these anemias may have been due to the fish tapeworm and were not true idiopathic anemias. He plainly states that he made no attempt to differentiate the two types. Schauman and Saltzman<sup>6</sup> have found that the frequency of tuberculosis in the tapeworm anemias is fairly common but very rare in idiopathic pernicious anemia. They give a lengthy discussion on the relationship between pernicious anemia and tuberculosis and cite authorities<sup>7</sup> who state that in all their experience they have never seen a combination of tuberculosis with the idiopathic variety.

#### REVIEW OF POSTMORTEM CASES

In order to determine the frequency of tuberculosis with pernicious anemia in a large series of cases, the postmortem records of more than 16,000 autopsies, performed from 1920 to 1932, inclusive, in the Department of Pathology at the University of Minnesota Medical School were examined. In this series, ninety-three cases of pernicious anemia were found. All of these were strikingly free from active tuberculosis. Ten of these cases showed chronic adhesive pleuritis, of which undoubtedly a high percentage was tuberculous, but the lesions were all healed. There were three cases of arrested or healed nonclinical pulmonary tuberculosis and one case of healed milary pulmonary tuberculosis. In the entire series of ninety-three cases there were present only two cases of active tuberculosis, and both of these were acute generalized milary tuberculosis, which was the direct cause of death in these patients. The absence of active chronic pulmonary tuberculosis is very striking. In a similar study on tuberculosis and cancer in a series of more than 11,000 autopsies, Carlson and Bell<sup>8</sup> found that, although there is apparently no antagonism between cancer and tuberculosis, active tuberculosis is much less frequent in persons with cancer than in the general postmortem series. They also found that cancer is relatively less frequent in active tuberculosis. From a knowledge of the incidence of these two diseases in the different age periods, one would expect a lowering of the incidence in the combination since the peak of tuberculosis frequency is in the middle of the third decade, a period in which the carcinoma incidence is very low, since it is just beginning. From then on the carcinoma incidence increases until it reaches its peak about the sixth decade. Although tuberculosis seems less common in cancer patients, nevertheless a combination of the two is encountered not infrequently. This is quite in contrast to the incidence of tuberculosis in pernicious anemia, where one would expect more frequent coexistence, since the greatest incidence of pernicious anemia occurs earlier than that of cancer and therefore during a period when tuberculosis is still relatively frequent. Yet our entire series of ninety-three cases of pernicious anemia did not present a single case of chronic pulmonary

2 Neuburger, Joseph. Die Beziehung der Tuberkulose zum hämolytischen Ikterus und zur perniziösen Anämie. Deutsche med. Wochenschr. 53: 997 (June 10) 1927.

3 Berger, Ludwig. Anaemia perniciosa nach Magenresektion. Auf flackern einer alten Tuberkulose im Endstadium der Erkrankung. Med. Klin. 27: 171 (Jan. 30) 1931.

4 Qvarnström, E. Perniciös anemi och tuberkulos. Finska läk. sällsk. handl. 71: 849 (Oct.) 1929.

5 Strandell, Burger. Pernicious Anemia. A Study of 117 Cases. Acta med. Scandinav. Suppl. 40: 1124 1931.

6 Schauman, O. and Saltzman, F. Die perniziösen Anämie in Enzyklopaedie der klinischen Medizin special volume Handbuch der Krankheiten des Blutes 2: 140, 1925.

7 Gulland, G. L. and Goodall, A. Pernicious Anemia. A Histological Study of Seventeen Cases. J. Path. & Bact. 10: 125 1904-1905.

8 Carlson, H. A. and Bell, E. T. A Statistical Study of the Occurrence of Cancer and Tuberculosis in 11,955 Postmortem Examinations. J. Cancer Research 13: 126 (July) 1929.

tuberculosis and only two cases of miliary tuberculosis. This result completely coincides with the reports in the literature in which occasional cases of acute miliary tuberculosis are reported but practically no cases of progressive pulmonary tuberculosis. It is obvious that cases of miliary tuberculosis present a type of acute infectious disease spread by the blood stream altogether different from chronic pulmonary tuberculosis. The factors of immunity and resistance are entirely different in the two diseases. It is therefore not unreasonable to conclude both from a review of the literature and from a study of a large series of postmortem cases that chronic progressive pulmonary tuberculosis is only on the rarest occasions associated with pernicious anemia.

#### REPORT OF CASES

CASE 1—B T, a man, aged 67, first seen May 17, 1927, complained of marked weakness, loss of appetite, nausea and gastric distress and a loss of 25 pounds (11 Kg). In September, 1924, his condition was definitely diagnosed as pernicious anemia. At that time he had a characteristic history, clinical and laboratory findings, including achylia gastrica, and a negative gastro-intestinal study. He had attacks of gastric distress and a marked glossitis, the heart and lungs were entirely normal. During three years observation his blood picture varied, the hemoglobin between 59 and 74 per cent, the red count between 1,900,000 and 3,300,000, the leukocyte count from 2,300 to 3,300, and the hemoglobin index above 1, generally around 1.4. The patient left for California, Nov. 15, 1926, and while there a pleural effusion developed which was diagnosed tuberculosis in March, 1927. When seen after his return in May, 1927, he was markedly underweight, his temperature was around 100 F, and his pulse, 110, he looked pale and was emaciated. The tongue was apparently normal and the chest showed poor expansion with dullness and numerous crepitant and subcrepitant rales over the right upper lobe, the liver was slightly enlarged, the spleen was not palpable and vibration sense was decreased in both legs. Roentgenograms of the chest showed extensive infiltration of the right upper lobe, some infiltration of the middle lobe and a slight infiltration of the left apex. Several sputum examinations showed numerous tubercle bacilli present. The diagnosis was active bilateral tuberculosis, with a small amount of fluid at the left base. A repeated gastric analysis showed an achylia present. The blood picture now showed 44 per cent hemoglobin, 1,700,000 red blood cells, hemoglobin index 1.3, leukocyte count 8,200 with a differential showing a few myeloblasts and myelocytes. June 2, the hemoglobin was 68 per cent, red count 3,300,000 and leukocytes 9,700, July 20, the hemoglobin was 46 per cent and leukocytes 26,500 of which 79 per cent were polymorphonuclears, 6 per cent lymphocytes, 9 per cent mononuclears and transitionals, 1 per cent eosinophils and 5 per cent myelocytes. The granulocytes showed a definite shift to the left. The patient was given several blood transfusions with some improvement of the blood but no change in his general condition. He had a progressively downhill course with an irregular temperature reaching 103.5 F. He became bedridden and markedly emaciated and died from a rapidly spreading tuberculosis of both lungs, September 22.

This case is unique in showing the development of a rapidly spreading pulmonary tuberculosis in a man suffering from pernicious anemia of at least four years' duration. The tuberculosis ran a course of about six months and finally caused the death of the patient. The blood picture seemed to improve at a time when the infection was active and spreading. The virus of the tuberculosis altered the blood picture in that the leukopenia changed to a normal leukocyte count and finally to a moderate leukocytosis (26,500). The polymorphonuclears showed a definite shift to the left and, toward the end, many metamyelocytes and myelocytes appeared. This condition was probably the result of a toxic stimulation on an embryonic type of bone marrow.

The hemoglobin index remained high throughout. This case as well as the succeeding one seemed to support the statement of Qvarnström that, when the two diseases do coexist, one does not seem to modify the course of the other.

CASE 2—Mrs. G. L., aged 68, admitted to the hospital, Oct. 2, 1932, complained of weakness and tingling of the hands and feet and difficulty in walking. Four years previously a severe anemia developed, which proved refractory to treatment and which later continued with exacerbations and remissions. In 1931 her condition was diagnosed pernicious anemia, she was given desiccated hog stomach, with some improvement. Physical examination at the present admission showed a pale lemon yellow skin, appetite poor, hemoglobin 17 per cent, red count 1,300,000, leukocyte count 1,900. She was given a transfusion, following which the hemoglobin one week later was 34 per cent, red count 1,800,000, leukocyte count 3,800. The temperature ranged from 98 to 101 F. She then went home for a short period, at which time she developed pain in the right chest, a cough with expectoration, chilliness, tingling sensations occasionally of the hands and feet, and later a pleural effusion. She was readmitted with a hemoglobin of 58 per cent, red count 2,100,000, leukocytes 7,600 and hemoglobin index 1.4. The patient died suddenly, November 14. The autopsy showed a massive miliary tuberculosis of both lungs with abscesses at the base of the right lower lobe, chronic adhesive pleuritis, generalized miliary tuberculosis of the liver and spleen, tuberculosis of the peribronchial lymph nodes, and hemosiderosis of the liver. The diagnosis was pernicious anemia and miliary tuberculosis.

This case showed an extensive miliary tuberculosis which resulted in the death of the patient. The patient also had a history of pernicious anemia of about four years' duration. The blood picture showed a progressive improvement, while the tuberculosis was rapidly spreading and the case was on a downhill course. This case is very similar to the two cases reported by Qvarnström.

#### SUMMARY AND CONCLUSIONS

- 1 Chronic pulmonary tuberculosis in pernicious anemia is so rare that its incidence is practically negligible. The mechanism of this inhibition of tuberculosis is unknown, but it is probable that some constitutional factor which underlies the development of pernicious anemia proves unfavorable for the evolution of pulmonary tuberculosis.

- 2 Whenever the two diseases do coexist, each seems to pursue a course entirely uninfluenced by the course of the other.

- 3 In case 1, the infectious disease altered the leukocytic picture by producing a definite shift to the left and the appearance of numerous metamyelocytes and myelocytes.

- 4 Acute miliary tuberculosis is somewhat more common as a complication of pernicious anemia.

- 5 In a series of 93 cases of pernicious anemia found among 16,600 postmortem examinations, only 2 cases of active tuberculosis of clinical importance were found, and both of these were acute generalized miliary tuberculosis. Not a single case of clinical chronic pulmonary tuberculosis was encountered in the entire series.

- 6 Four cases of tuberculosis complicating pernicious anemia are here reported, two are from postmortem studies and two from personal observation. Of these, three were acute general miliary tuberculosis and only one was chronic pulmonary tuberculosis.

- 7 The freedom of pernicious anemia cases from tuberculosis cannot be explained by the fact that "a person usually has only one major disease."<sup>8</sup> There must be an antagonism between them.

## Clinical Notes, Suggestions and New Instruments

### EPHEDRINE AND PICROTOXIN USED SUCCESSFULLY IN AMYTAL POISONING

JOHN H. ARNETT M.D. PHILADELPHIA

A girl, aged 3½ years, at about 11 30 a. m., seemed excited and fretful, threw herself about and talked incessantly with a thick enunciation. She fell down again and again in attempting to walk. Her eyes wandered and were apparently unable to fix on any object. Soon she became drowsy and was unable to stand, owing apparently to weakness in the lower extremities.

At 11 50, an open box which had previously contained several (probably not more than four) 1½ grain (0.1 Gm.) tablets of amytal (isoamyllethylbarbituric acid) was found in the room in which she had been playing. The child was promptly given two teaspoonfuls of syrup of ipecac, which produced vomiting at 12 20 p. m., the vomitus being saved and later giving a positive reaction for the barbitol derivatives. I saw her at 1 20, at which time she showed flushing of the face and unconsciousness, vigorous shaking arousing her only partially. Gastric lavage was employed, followed by the administration through the tube of ½ grain (0.05 Gm.) of ephedrine sulphate and an unmeasured quantity of magnesium sulphate solution.<sup>1</sup> At 2 o'clock, ¼ grain (0.00065 Gm.) of picrotoxin was administered hypodermically.

The passage of the stomach tube and the administration of the hypodermic evoked crying and a slight struggle, but she lapsed into unconsciousness again immediately and could not be aroused by calling or shaking. Even when struggling the head hung limp, and the muscles of the neck and lower extremities appeared extremely weak. There was ptosis of the eyelids. At this time the systolic blood pressure was 90 mm. of mercury, and the pulse was 120. Respirations were not noticeably changed in rate or depth. At 2 30 she vomited, seemed much brighter, and was able to stand alone, leaning against the side of the bathtub. At 2 45 a soapsuds enema was given, resulting in a small stool. She was still drowsy, but could easily be aroused. At 3 45 a second dose of ¼ grain (0.00065 Gm.) of picrotoxin was administered hypodermically. She vomited twice more during the afternoon, but continued steadily to improve, and was able to come downstairs for dinner, though she fell asleep during the meal. On the following day she played about the house as usual and had two liquid stools. No untoward later results were noted.

The use of ephedrine in the treatment of poisoning with the barbitol derivatives was suggested by the work of Schmidt<sup>2</sup> and of Chen and Schmidt<sup>3</sup> who found it to have an exceedingly powerful stimulating action on the respiratory center. It was found by Cameron and McCulloch<sup>4</sup> to be of decided value in the treatment of nembital (sodium-ethyl methyl butyl barbiturate) poisoning in animals.

Picrotoxin is a neutral principle derived from the fruit of *Anamirta paniculata* and has the empirical formula  $C_{20}H_{14}O_8$ . It was formerly used orally in the treatment of various conditions, including the night sweats of phthisis, in doses of from ½ to ½ grain (0.003 to 0.001 Gm.) for adults. It stimulates the medulla, and in large doses produces convulsions. Its action resembles somewhat that of strychnine, though it probably acts on a different part of the central nervous system.<sup>5</sup> It has not been included in the United States Pharmacopeia, tenth decennial revision or in other pharmacopoeias except those of France and Mexico.<sup>6</sup> Its use in acute poisoning with the barbitol derivatives has been studied in animals by Maloney,

Fitch and Tatum<sup>7</sup> and by Maloney and Tatum<sup>8</sup> who found that picrotoxin shortened the recovery period when sublethal doses of the barbitol derivatives were given to animals and effected a cure when lethal doses within certain limits had been given.

As far as I am aware, this is the first report of the use of either ephedrine or picrotoxin in a human case of poisoning by any of the barbitol derivatives. Since this type of poisoning is becoming increasingly more common, it is hoped that others using this form of treatment will report their results in order that the value of these drugs may be established or disproved.

#### SUMMARY

A girl, aged 3½ years, took a toxic dose of amytal the exact amount not being known. Emetics and gastric lavage were given. Ephedrine, ½ grain (0.05 Gm.), and magnesium sulphate were administered by stomach tube. Two doses of picrotoxin of ¼ grain (0.00065 Gm.) each, were given hypodermically. Improvement progressed with surprising rapidity, resulting in complete recovery.

2116 Pine Street.

### THE USE OF AMIDOPYRINE IN A CASE OF DIABETES INSIPIDUS

• BERNARD S. KAHN M.D. NEW YORK

In July, 1932, Scherf<sup>1</sup> made a report on the use of amidopyrine in the treatment of diabetes insipidus. I had at that time a patient suffering from this disease whose only relief from the great frequency of urination was daily injection of a pituitary preparation. Numerous attempts to alleviate his symptoms by oral administration of large doses of desiccated pituitary gland, and by the intranasal use of sprays and tampons saturated with a potent preparation of double strength solution of pituitary or ampules of pitressin were all without avail. The use of a snuff made from desiccated whole pituitary gland was also ineffective, not the slightest relief being obtained from any of these procedures. The use of amidopyrine according to Scherf seemed to offer some hope.

The patient, H. B., is a man, 6 feet (183 cm.) in height and weighing 160 pounds (72 Kg.). Before the onset of the present illness he was under my care for a period of three years for various minor throat and respiratory infections. His previous history was devoid of any illness having a bearing on his present condition.

June 7, 1931, he consulted me for frequency of urination and polyuria. These symptoms started on May 15, 1931, after a mild intestinal upset for which he had taken a vigorous cathartic. Since that time he had been obliged to urinate every half hour and he passed large quantities of colorless urine each time. He also had to get up five or six times nightly to void. Formerly he perspired freely even in winter. This had been so troublesome that he had consulted a physician for relief. Since the onset of his illness, however, he had never noticed the slightest perspiration.

Physical examination revealed no abnormality. The urine had a specific gravity of from 1.001 to 1.003 on more than twenty examinations made at various times during the course of a few days. There was never any sugar or albumin present. The microscopic examination was negative. The intake and output of fluid was measured for one week. The average figures were an intake of 6,500 cc. and an output of 6,200 cc.

The blood pressure was 120 systolic, 80 diastolic. A roentgenogram of the skull showed a normal sella turcica. The Wassermann test was negative. The blood sugar was 88 mg. per hundred cubic centimeters and the urea nitrogen 13 mg.

Eyeground examination showed normal fundi. There was no contraction of the color fields. A reexamination of the fundi and color fields in August, 1932, more than a year later, revealed no change. An examination of the nasopharynx for the remains of Rathke's pouch was negative. This was done

7 Maloney A. H., Fitch R. H., and Tatum A. L. *J. Pharmacol. & Exper. Therap.* 41: 465 (April) 1931.

8 Maloney A. H. and Tatum, A. L. *J. Pharmacol. & Exper. Therap.* 44: 337 (March) 1932.

1 Scherf D. *Wien. Arch. f. inn. Med.* 22: 457 (July) 1932.

1 About two tablespoonfuls of magnesium sulphate in a little less than a tumblerful of water.

2 Schmidt C. F. *J. Pharmacol. & Exper. Therap.* 35: 297 (March) 1929.

3 Chen K. K. and Schmidt, C. F. *Medicine* 9: 1 (Feb.) 1930. *The Action and Clinical Use of Ephedrine*, *J. A. M. A.* 87: 836 (Sept. 11) 1926.

4 Cameron D. E. and McCulloch R. *Canad. M. A. J.* 26: 413 (April) 1932.

5 Cushny A. R., Edmunds C. W. and Gunn, J. A. *A Textbook of Pharmacology and Therapeutics* ed. 9 Lea & Febiger, Philadelphia 1928, p. 380.

6 Squires *Companion to the British Pharmacopoeia*, ed. 19 London, 1916 p. 1019.

in order to rule out the possibility of pressure on the pituitary from cystic changes in a persistent pouch.

The diagnosis established, treatment was begun with the hypodermic use of double strength solution of pituitary. This produced immediate relief of symptoms. An injection of 1 cc. just before bedtime gave complete relief until noon the next day. The first specimen of urine passed in the morning showed a specific gravity of 1.018. His sleep was uninterrupted by the necessity to void.

Eventually ampules of pitressin were substituted, as the double strength solution of pituitary produced cramps a short time after the injection. The only ill effect noticed from these injections was an intense blanching of the face, which lasted for about two hours following the use of either solution of pituitary or ampules of pitressin.

On this regimen the patient was comfortable, and only occasionally when he had some important engagement was it necessary for him to repeat the dose at 6 p. m. His appetite was good but not voracious. His weight remained stationary for over a year. During this time his fluid intake was on the average 4,500 cc. and his output was very nearly the same.

In August, 1932, after the appearance of the article by Scherf, the use of amidopyrine was instituted. Fifteen grains (1 Gm.) was given immediately before retiring. For the first time since the onset of his illness he was able to go through the entire night without an injection without having to urinate five or six times. The first specimen in the morning showed a specific gravity of 1.009. This effect was repeated on the three successive nights. On the fifth day, however, he noticed that his thirst was increased and he had to void much more frequently. This is in accord with the experience of Scherf, who noticed that the effect of the drug wore off in from three to ten days in different individuals. The effect returned, however, if the drug was discontinued for twenty-four hours.

At present my patient uses 15 grains (1 Gm.) of amidopyrine every night for three nights and the fourth night uses one ampule of pitressin. He also takes 15 grains of amidopyrine at noon. This keeps him as comfortable as the daily dose of pitressin formerly did. On this schedule his average fluid intake is about 4,500 cc. and the output is about 4,000 cc.

The relief from constant hypodermic medication on the score both of convenience and of expense makes this plan of treatment appreciated by the patient. The embarrassment of a ghastly white face following injection of pitressin during the day is relieved. The only side-effect of the amidopyrine in this patient is a transient light headedness for a short time after taking the drug. The urine is colored an intense orange by the comparatively large dose of amidopyrine.

670 West End Avenue.

#### PANCREATIC FAT NECROSIS FOLLOWING SUBTOTAL THYROIDECTOMY

W. ROSS MORRIS, M.D., ANN ARBOR, MICH.

Pancreatic fat necrosis is a somewhat uncommon condition. Especially is it rare for it to occur following an operative procedure and to be a factor in the production of death in such a case. It would therefore seem that the following case is of sufficient interest to justify its report.

Opie<sup>1</sup> states that Wulff (1902) and Fabyan (1907) have each reported cases of pancreatic fat necrosis in which no lesion in the pancreas has been found. Opie suggests in these cases a localized lesion of the pancreas, so slight as to escape notice. Warthin (1904) reported a case of pancreatic fat necrosis about an aberrant gland. The occurrence of fat necrosis produced by intestinal fluid containing the fat-splitting enzyme of the pancreas cannot be excluded.

#### REPORT OF CASE

**History**—Mrs. A. H., white, aged 56 entered the hospital complaining of goiter and shortness of breath. A goiter had been present for twenty years. This had gradually increased in size for several years, then remained about the same size

for several years, and again increased in size during the six months immediately before admission to the hospital. In general, her health had been excellent until one year before admission, during which time she had noted ease of fatigue, marked nervousness, shortness of breath, palpitation, swelling of the ankles, frequent feeling of increased body heat, and excessive perspiration. All of these symptoms had gradually become more marked, especially during the two months before admission.

Examination revealed a large adenomatous goiter involving chiefly the left lobe of the thyroid, in which cystic change had taken place, moderate generalized arteriosclerosis, arteriosclerotic heart disease and myocardial insufficiency. The blood pressure was 170 systolic and 78 diastolic. It was felt that the heart disease was partly on a thyrogenic basis as well as arteriosclerotic. The urine and blood studies were negative. The Kahn test was negative. The basal metabolic rate was -7 per cent, the pulse rate, 56. A laryngeal examination was negative. Roentgen examination of the chest showed substernal prolongation of the thyroid with compression and deviation of the trachea, calcified atheromatous changes in the ascending, horizontal and descending parts of the aorta, and apparent calcification of the aortic and pulmonic ring. The lung fields were essentially normal.

In spite of the fact that the patient was a poor operative risk, owing to the cardiovascular disease, it was decided that subtotal thyroidectomy was indicated. After six days of preparation, consisting of rest in bed and digitalization, she had markedly improved and seemed in good condition. Subtotal thyroidectomy was performed and a large, cystic adenomatous goiter was removed. The immediate postoperative condition was satisfactory and continued so for about fifteen hours. She then complained of severe, generalized abdominal pain and vomited frequently. The abdomen was moderately distended and tympanitic throughout, there was marked tenderness throughout the upper part of the abdomen and peristalsis was heard. The rectal temperature was 100 F. and the pulse 110. The symptoms became worse, abdominal pain more marked, vomiting more frequent, abdominal distention increased somewhat, the rectal temperature rose to 102 F., the pulse to 146 and very weak, tenderness in the upper part of the abdomen increased, and there was a profuse cold perspiration—the picture of severe shock. There was evidence of considerable fluid in the lungs and moderate edema of the lower extremities. Death occurred thirty-eight hours after operation.

**Autopsy**—This revealed extensive pancreatic fat necrosis in the pancreas, mesentery, omentum and retroperitoneal adipose tissue (thrombosis of branches of intrapancreatic veins with localized necrosis involving ducts) generalized arteriosclerosis with aortic calcification, arteriosclerotic atrophy of kidneys, slight chronic glomerulotubular nephritis, passive congestion and edema of the lungs, bilateral hydrothorax, edema of the lower extremities and the brain, terminal cardiac failure with dilatation, passive congestion of all organs, Graves constitution.

From the conditions found on microscopic examination of the pancreas the pathologist gained the opinion that the pancreatic lesions were on a vascular basis, rather than having had their origin in the pathologic changes of the duct.

#### COMMENT

The etiology of pancreatic fat necrosis is not definitely known. However, the preponderance of evidence seems to indicate that infection in the biliary tract is at least the most important etiologic factor. In this case there was no definite evidence of previous biliary infection. The definite cause of the pancreatic fat necrosis is not apparent. It is not clear whether the intrapancreatic venous thrombosis was the cause of or the result of, the pancreatic changes. However, it seems more likely that the pathologic changes resulted from the thrombosis. But what produced the thrombosis? This cannot be answered. It is not clear that it was in any way connected with the operation or anything in the patient's condition before operation. Yet this relationship cannot be excluded, for the pancreatic lesions did develop immediately following operation and undoubtedly played a large part in the fatal termination.

University Hospital

From the Department of Surgery, University of Michigan Medical School.  
<sup>1</sup> Opie, E. L., *Diseases of the Pancreas*, Philadelphia, J. B. Lippincott Company, 1910.

## Special Article

DIPHTHERIA MORTALITY IN LARGE  
CITIES OF THE UNITED  
STATES IN 1932

## TENTH ANNUAL REPORT

This report concerns the ninety-three cities dealt with in the recent article on typhoid,<sup>1</sup> and the rates are calculated on the basis of the population figures used in that article. The number of diphtheria deaths in each city has been reported to us by the respective health department.<sup>2</sup>

So far as we have been able to ascertain, tables 1-8 contain rates for all the years since 1890 for which diphtheria deaths are available in the records of the health departments of the respective cities or in Chapin's "Municipal Sanitation." Certain of the five-year averages for the individual cities are based on

TABLE 1—Death Rates of Fourteen Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
New Haven	0.6	0.6	0.6	1.6	7.1	14.2	14.0	22.7	15.6	54.8	74.5
Bridgeport	0.7*	1.4	1.4	11.8	19.6	23.4	23.8	26.8	34.2	63.9	79.3
Hartford	1.2†	2.4	1.2	5.3	11.9	13.8	20.3	28.1	38.8	47.8	120.9
Waterbury	2.0	0.0	3.0	2.6	17.0	23.0	20.6				
Cambridge	2.6	0.9	0.9	3.2	8.9	12.9	23.8	25.3	40.7	71.9	58.0
Fall River	2.6†	7.1	3.5	12.0	25.5	23.6	24.0	34.4	50.1	43.8	46.9
Springfield	2.6	2.6	5.3	10.3	15.4	24.9	19.1	31.3	20.6	51.3	68.2
New Bedford	2.7†	8.0	8.0	10.9	16.5	17.0	20.9	22.6	25.1	53.6	20.0
Somerville	2.5	5.7	26.9	5.7	10.7	20.2	21.4	21.5	40.5	57.8	37.4
Lynn	2.0†	3.9	10.7	18.5	17.0	17.8	17.2	21.7	38.0	44.0	49.0
Boston	4.2†	4.7	2.9	8.3	20.2	26.3	20.0	26.2	53.7	83.9	112.2
Providence	5.8†	9.8	7.9	9.5	15.8	29.3	29.8	30.7	41.2	53.5	55.3
Worcester	6.0	4.0	1.5	8.6	15.5	14.1	21.3	32.2	16.5	50.3	47.8
Lowell	11.0†	5.0	4.0	10.6	16.7	23.5	20.6	31.0	59.3	44.3	30.4

\* All of the diphtheria deaths reported were stated to be in nonresident deaths.

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Rate computed from population as of April 1 1930 as no estimate for July 1 1932, was made by the Census Bureau.

figures for less than five of the years indicated. The irregularities have heretofore been marked by footnotes giving the missing years for each city. To clarify the tables, the specific footnotes are replaced in the present report (and the practice will probably be continued in the future) by the simple note "Incomplete data." The years that are included in the five-year averages, but for which diphtheria mortality data are lacking, are as follows: Akron, 1905, 1906, 1907, 1908, Canton, 1915, Des Moines, 1905, 1906, 1907, 1908, Erie, 1895, Fort Worth, 1918, 1919, 1920, 1921, 1922, 1923, Houston, 1902, 1903, 1904, Indianapolis, 1890, Jacksonville, 1925, Kansas City, Kan., 1910, 1911, Kansas City, Mo., 1910, 1911, Long Beach, 1920, 1921, Louisville, 1890, Miami, 1925, Peoria, 1907, 1908 and the first four months of 1909, Salt Lake City, 1890, 1891,

The preceding articles were published in THE JOURNAL, Sept. 20 1924 p. 918, April 25, 1925, p. 1269, April 3 1926 p. 1003, April 30 1927 p. 1396, May 19 1928 p. 1621, May 25 1929 p. 759, June 7 1930 p. 1838, May 23, 1931 p. 1768, May 7, 1932 p. 1644.

1 Typhoid in the Large Cities of the United States in 1932 J. A. M. A. 100 1491 (May 13) 1933.

2. It should be noted that the figures include all deaths of diphtheria that have occurred within the city limits of nonresidents as well as residents. In some instances this undoubtedly gives an exaggerated impression of the amount of diphtheria in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census Mortality Statistics 1912, p. 13). Cities in which one third or more of the reported diphtheria deaths are stated to have occurred in nonresidents are indicated in tables 1-8. A further discussion of the problem of the nonresident in diphtheria statistics was given in the report last year.

HARBORVIEW DIVISION  
Seattle, 1900, Tacoma, 1915, Tampa, 1915, 1916, Tulsa, 1920, 1921, 1922, Utica, 1925, Youngstown, 1890, 1891, 1892

The New England group (table 1) again makes a new low record (3.65), some individual cities registering a low rate for the third consecutive year. The Connecticut municipalities, led by New Haven, have had in recent years a notably smaller diphtheria mortality than the Massachusetts cities. Bridgeport, after several years of an intensive control campaign, makes a par-

TABLE 2—Death Rates of Eighteen Cities in Middle Atlantic States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Albany	0.0	4.6	3.1	7.5	12.8	10.4	20.0	31.6	26.9		
Utica	0.0	1.0	2.0	13.4†							
Yonkers	0.0	0.7	1.5	10.4	17.0	17.7	23.3				
Newark	0.4	3.6	10.8	14.5	9.7	14.6	23.8	30.1	46.7	70.1	110.4
Syracuse	0.5*	0.5	0.9	2.0	22.9	12.0	16.6	17.4	17.7	31.1	55.4
Scranton	0.7†	1.4	2.1	11.7	12.3	22.1	23.4			77.8	48.6‡
Philadelphia	0.8	1.5	2.5	11.8	16.7	22.7	24.6	34.1	50.0	100.6	119.4
Rochester	0.9†	0.6	1.5	7.5	16.0	12.7	22.1	32.4	32.3	45.9	96.6
Trenton	1.6*	4.8	5.7	4.4	7.3	8.8	12.3	15.8	23.6	92.7§	89.7§
Reading	2.7	0.9	3.6	7.3	21.1	16.9	35.7	29.2	70.1	72.0	94.1
New York	2.9	2.6	2.9	10.7	14.0	21.8	28.0	40.0	58.0	85.8	134.4
Buffalo	3.4	6.2	8.7	9.1	24.0	27.3	22.0	18.4	24.8	53.5	60.9
Elizabeth	3.4†	4.3	14.8	13.2	19.2	19.3	14.8	51.7	42.4	60.5	79.3
Jersey City	3.7	4.1	16.1	11.5	16.4	21.0	23.2	32.6	57.9	85.4	103.6
Pittsburgh	4.2	4.1	8.5	11.5	20.1	22.3	29.3	20.4	36.9	32.9	56.4
Paterson	4.3†	5.8	8.7	9.1	18.5	13.5	16.1	25.5	52.9	111.8	145.4
Erie	6.7	2.5	3.4	6.8	16.8	15.1	17.7	27.1	42.3	23.1†	
Camden	8.4	9.2	11.8	21.9	20.3	22.2	38.8	48.9	52.6	93.8	194.0

\* All of the diphtheria deaths reported were stated to be in nonresident deaths.

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Diphtheria deaths from Chapin's Municipal Sanitation.

§ Incomplete data.

¶ Diphtheria deaths for Scranton furnished by Pennsylvania Department of Health, Harrisburg.

ticularly fine showing, the single diphtheria death reported being that of a nonresident. The diphtheria mortality in Boston is less than for the year before, though not quite equaling its banner year of 1930. Lowell experienced a considerable increase in diphtheria in 1932. In Worcester the mortality from the disease seems to be slowly creeping up.

The cities in the Middle Atlantic states (table 2) better their excellent record of 1931 and easily maintain

TABLE 3—Death Rates of Nine Cities in South Atlantic States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1925-1929	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Richmond	1.1†	5.4	5.5	6.9	9.8	6.8	7.0	9.8	24.4	17.6	59.7
Baltimore	1.5†	2.8	2.5	7.6	11.4	18.5	14.2	10.1	39.0	63.1	70.0
Wilmington	1.9†	6.6	10.3	10.9	11.6	15.2	18.0	27.8	50.9	84.9	83.8
Norfolk	3.1†	9.2	6.2	4.1	4.3	4.1	6.7	17.0			
Washington	3.2	7.1	3.7	7.1	10.5	11.9	6.9	11.2	23.5	50.0	77.9
Tampa	4.6	3.8	3.0	4.6	5.2	9.5*					
Atlanta	4.0	3.2	1.1	7.0	13.8	10.1	12.5	14.2	11.1	10.5	8.8
Jacksonville	7.1	2.3	5.4	6.0†							
Miami	7.3	0.9	8.6	5.4†							

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

‡ Rate computed from population as of April 1 1930 as no estimate for July 1 1932, was made by the Census Bureau.

\* Incomplete data.

their ranking as the group of lowest diphtheria mortality. Three of the five American cities<sup>3</sup> that did not register a single death from diphtheria in 1932 are in this geographic division. It is suggestive that several cities in this group were among the first in the country to put into practical application modern methods of

3 Albany, Utica, Yonkers, two other Middle Atlantic cities, Syracuse and Trenton with only nonresident deaths are perhaps nearly if not quite in the same class.

diphtheria control New York, for the third year in succession, reports a very low rate. Special attention may be directed to the low rate for 1932 in Philadelphia (08), the best record yet achieved by any American city with a population of more than a million. The city

TABLE 4—Death Rates of Eighteen Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1929	1928	1915	1910	1905	1900	1895	1890
Grand Rapids	0.0	0.0	0.6	2.0	19.6	18.5	20.0	26.6	17.2	32.4	92.2
South Bend	0.0	0.0	5.8								
Cleveland..	1.4	1.2	4.1	15.3	14.7	20.0	24.6	20.8	42.6	45.3	95.7
Toledo	1.7	5.0	2.4	7.2	22.4	14.1	25.4	20.4	56.8	34.6	89.3
Chicago	1.9	6.2	12.2	11.7	17.5	31.2	37.9	27.0	33.9	69.7	117.3
Franklin	1.9	1.9	3.0	3.7	13.9	14.9	10.1	21.2	13.8	18.1	69.7
Indianapolis	1.9	2.4	3.6	6.0	11.7	21.4	13.5	13.3	15.9	36.4	97.2#
Akron	2.2	1.1	3.1	4.9	10.4	18.9	27.8	21.8#			
Milwaukee	2.5	1.8	3.6	8.5	11.4	10.8	27.8	29.4	22.7	51.7	116.2
Canton	2.8	0.9	1.9	2.9	17.5	15.1#					
Cincinnati	2.8†	2.0	2.9	5.2	10.6	13.2	13.9	17.0	17.3	37.3	103.7
Flint	2.9	3.0	0.0	4.5	29.9	20.5	12.7	11.0	16.8	6.9	69.2
Columbus	3.7	3.4	3.4	4.6	8.6	7.0	12.1	10.5	11.0	28.5	58.9
Detroit	3.7	5.8	11.0	10.7	24.3	32.2	33.3	22.6	38.5	67.9	132.9
Youngstown	5.7	2.9	0.5	10.5	18.5	11.9	40.5	33.5	28.0	17.6	28.4#
Fort Wayne	5.8	4.2	0.9	5.1	13.1	6.3					
Dayton	7.7	2.1	0.5	4.0	9.4	9.3	22.1	13.3	17.2	27.4	82.9
Peoria	12.6	1.8	5.7	4.9	7.4	10.8	10.6	10.0#	14.0	14.6	68.0

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Diphtheria deaths from Chapin's Municipal Sanitation.

# Incomplete data.

TABLE 5—Death Rates of Six Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1929	1928	1915	1910	1905	1900	1895	1890
Louisville	3.0	3.9	1.6	4.6	10.4	9.5	9.0		39.0	49.6	#
Birmingham	4.0†	3.7	7.7	5.4	5.3	7.2	8.3	6.2	13.4	16.5	26.3
Chattanooga	4.8	9.8	1.7	5.9	8.7	8.9					
Nashville	7.0†	0.4	11.7	11.8	8.0	8.9	7.3	10.8	13.9	30.1	28.4
Memphis	7.0†	10.8	4.7	5.8	9.5	11.2	11.9	13.4	6.9	10.0	23.5
Knoxville	15.2†	11.0	2.8	6.3	11.2						

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Diphtheria deaths from Chapin's Municipal Sanitation.

# Incomplete data.

TABLE 6—Death Rates of Nine Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1929	1928	1915	1910	1905	1900	1895	1890
St. Paul	0.3*	1.1	2.2	5.2	17.6	20.7	31.4	31.1	27.9	43.3	75.4
Duluth	1.0*	0.0	1.0	2.0	6.0	10.2	8.8	38.2	29.1	7.6	49.5
Minneapolis	1.0	2.7	2.4	11.9	13.4	10.9	28.3	24.4	44.6	34.0	55.0
Kansas City Kan.	2.4†	4.1	4.9	4.6	9.8	23.1	12.4#				
Kansas City Mo.	3.4†	3.9	4.0	4.7	14.4	22.8	15.7#				
St. Louis	8.5	4.6	5.1	10.3	10.1	24.4	23.7	19.4	43.3	62.9	67.7
Omaha	6.8	8.8	4.7	6.4	22.9	35.8	15.8	24.5	20.5	28.2	82.9
Des Moines	8.2	0.7	2.1	5.2	15.1	16.6	15.1	23.8#			
Wichita	9.2	5.2	3.6	4.2							

\* All of the diphtheria deaths reported were stated to be in nonresidents.

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Incomplete data.

of Camden brings up at the foot of the list, as it did in 1931, this city also had the highest typhoid rate in the group in 1932.<sup>1</sup>

Several of the South Atlantic cities (table 3) show notable improvement over preceding years, Richmond, Baltimore and Wilmington all having low rates. The three Florida cities Tampa, Jacksonville and Miami, on the other hand, report rates that indicate an excessive prevalence of diphtheria. It is a little surprising to find that Miami in 1932 records more than double the diphtheria rate in New York.

The East North Central cities (table 4), which in 1925-1929 had the highest average diphtheria rate of any section of the country, have made the greatest relative improvement and now are second only to the Middle Atlantic cities. Particularly notable in this group stands the city of Cleveland. The reduction in diphtheria in recent years in Detroit, and particularly in Chicago, is quite spectacular. South Bend, also in this group, is apparently the only city in the country which in 1932 lost none of its citizens from either diphtheria or typhoid. Dayton and Fort Wayne seem to have had an unusual prevalence of the disease, and Peoria has apparently had a real epidemic.

The East South Central cities (table 5), as a whole, do not show much change from the preceding year. Louisville, Birmingham and Nashville having very sim-

TABLE 7—Death Rates of Eight Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1929	1928	1915	1910	1905	1900	1895	1890
Houston	5.5	3.9	4.1	8.3	6.4	6.1	7.8	10.5	4.2#	2.4	1.3
New Orleans	5.5	3.8	8.5	8.5	6.5	11.6	19.6	10.2	11.5	17.1	51.3
El Paso	5.6	5.7	8.8	7.3	20.0	17.6	29.2				
San Antonio	6.5	6.2	7.3	10.3	7.7	8.7	6.7	7.6	17.1	20.6	4.4
Tulsa	7.3	15.1	2.1	12.5	8.3#						
Oklahoma City	8.2	5.1	7.0	10.9							
Fort Worth	11.7	7.2	4.3	10.8	1.7#	2.0#	2.6	2.8	5.4		
Dallas	16.3	6.6	6.9	9.8	8.3	7.4	6.9	8.1	16.0	16.0	21.8

# Incomplete data.

TABLE 8—Death Rates of Eleven Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1932	1931	1930	1929	1928	1915	1910	1905	1900	1895	1890
Seattle	0.3	0.3	1.6	1.4	0.6	5.5	5.2	12.5	13.4#	27.9†	
Salt Lake City	0.7	0.0	0.7	10.1	12.5	14.5	15.1	34.2	46.0	14.8	56.1#
Spokane	0.8	0.8	1.7	7.5	11.3	4.2	7.6	20.8		50.5#	18.1
Tacoma	0.9	8.3	6.4	9.3	12.4	7.7#					
Long Beach	1.2	0.6	1.4	2.6	10.4#						
San Francisco	1.5	0.8	2.2	4.6	23.0	17.0	9.2	14.4	44.2	21.0	54.8
Portland	2.2	0.6	2.3	0.4	11.3	0.0	12.3	12.2	20.2		
Oakland	2.3†	0.3	3.0	7.4	18.8	8.1	10.3	16.1	29.1		
San Diego	3.1†	2.5	2.0	0.6	12.2	10.5	8.0	5.8	2.4		
Denver	5.4	4.4	3.5	8.9	23.2	6.7	10.2	20.8	20.6	27.3	130.9
Los Angeles	6.3	5.2	5.6	7.0	14.4	7.1	7.5	15.3	25.4	35.8	46.0

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.

# Diphtheria deaths from Chapin's Municipal Sanitation.

# Incomplete data.

TABLE 9—Ten Cities with Highest Diphtheria Rates for 1932

Dallas	16.3	Wichita	9.2
Knoxville	15.2	Camden	8.4
Peoria	12.6	Des Moines	8.2
Fort Worth	11.7	Oklahoma City	8.2
Lowell	11.0	Memphis	7.6

TABLE 10—Ten Cities with Lowest Diphtheria Death Rates for 1932

Albany	0.0	St. Paul	0.3
Grand Rapids	0.0	Seattle	0.3
South Bend	0.0	Newark	0.4
Utica	0.0	Syracuse	0.5
Yonkers	0.0	New Haven	0.6

ilar rates to those for 1931. Knoxville, however, had next to the highest rate in the table, being exceeded only by Dallas.

Although the group rate for the cities of the West North Central states (table 6) does not register much change, individual cities such as St. Paul, Minneapolis, Kansas City, Mo., and particularly St. Louis, show

steady improvement St Paul and Duluth indeed report their only deaths as among nonresidents Des Moines and Wichita seem to have had small epidemics

Six of the eight West South Central cities (table 7) show an increase in 1932 over 1931 and the group as a whole has an average rate of 8.16 in 1932, as against 5.93 in 1931 Fort Worth and Dallas the latter with the highest rate among the ninety-three cities, seem to

TABLE 11—Number of Cities with Various Diphtheria Death Rates

	No. of Cities	40 and Over	20 and Over	10 and Over	5 and Over	Under 5
1890-1894	64	52	60	61	62	2
1895-1899	60	51	51	53	61	1
1900-1904	68	52	46	64	66	2
1905-1909	72	51	43	66	71	1
1910-1914	79	51	50	63	78	1
1915-1919	84	0	2	62	81	3
1920-1924	88	0	14	61	80	2
1925-1929	92	0	1	22	67	2
1930	92	0	2	21	62	20
1931	92	0	1	21	58	14
1932	92	0	2	17	47	45
1933	91	0	2	11	52	61
1934	91	0	0	7	29	64
1935	93	0	0	6	27	66

TABLE 12—Total Diphtheria Death Rate for Eighty-Eight Cities 1923-1932\*

	Population	Diphtheria Deaths	Diphtheria Death Rate per 100,000 Population
1923	31,060,848	4,078†	13.13
1924	31,722,841	3,439	10.84
1925	32,534,854	3,131	9.67
1926	33,046,827	3,106	9.40
1927	33,708,870	3,403	10.26
1928	34,370,812	3,176	9.24
1929	35,032,806	2,738	7.82
1930	35,694,802	1,827	5.12
1931	36,356,812	1,260	3.74
1932	37,018,712	1,191	3.21‡

The five following cities are omitted from this summary because data for the full period are not available Jacksonville Miami Oklahoma City South Bend and Utica

† Data for Fort Worth lacking  
‡ The rate for the ninety-three cities in 1932 is 3.2 (population 37,733,512 diphtheria deaths 1,220) The corresponding rate in 1930 was 5.12, and 3.2 in 1931

TABLE 13—Total Diphtheria Death Rates per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions

	1922 Population	Diphtheria Deaths 1922	Diphtheria Death Rates 1922	1931	1932	1933	1934	1935
New England	2,631,500	90	114	3.05	4.35	4.57	8.34	
Middle Atlantic	14,038,800	330	356	2.53	2.78	4.10	9.07	
South Atlantic	2,371,507	70	104	3.20	4.42	3.60	7.77*	
East North Central	9,758,600	2,80	400	2.67	4.23	7.79	11.21†	
East South Central	1,242,500	70	84	0.11	0.87	5.00	6.24	
West North Central	2,720,700	91	100	3.34	3.72	3.74	7.82	
West South Central	1,961,700	160	113	8.10	5.03	0.47	9.24‡	
Mountain and Pacific	4,023,700	138	106	3.43	2.71	3.59	6.28	

\* Lacks data for 1922 for Jacksonville and Miami

† Lacks data for South Bend

‡ Lacks data for Oklahoma City for 1922 and 1930

be the chief sufferers from this disease It is curious that diphtheria should now be so relatively prevalent in this region, since from 1900 to 1920 the cities of the Southwest had considerably less diphtheria mortality than the rest of the country

The Mountain and Pacific group of cities (table 8) shows an increase in the diphtheria rate from 2.71 for 1931 to 3.43 for 1932, Tacoma being the only city in the group to register a reduction Seattle continues to have a lower rate than Portland, and San Francisco than San Diego and Los Angeles

At the present time, the cities in the United States that have a cold winter and a generally "bad climate" are faring considerably better with respect to diphtheria than the Southern cities and the climatic resorts of the Western coast Long term records however, will be necessary for the proper interpretation of these somewhat surprising records

## Council on Pharmacy and Chemistry

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
PAUL NICHOLAS LEECH, Secretary

**CITROCARBONATE, ACETONYL, SALICYLONYL, BROMIONYL, BROMIONYL WITH ACETYL-SALICYLIC ACID, BROMIONYL WITH BARBITAL, OINTMENT SCABICIDE, KEROLYSIN, SUPER D COD LIVER OIL, PRODUCTS OF THE UPJOHN COMPANY, NOT ACCEPTABLE FOR N N R**

For many years the Upjohn Company of Kalamazoo, Mich., has exploited to the medical profession and indirectly to the public a large number of pharmaceutical preparations many have been marketed with unwarranted and extravagant therapeutic claims some with therapeutically suggestive names, not a few are of semisecret composition This firm has developed promotion through the agency of "detail men" to a high state of efficiency Many physicians attest the insidious persuasiveness of these advance agents, their generosity with samples the brilliant spectrum of their line of pills the profusion of their "literature." Some preparations of the Upjohn Company have in a few communities largely replaced standard nonproprietary products of equal or greater merit to the financial benefit of the firm and to an equivalent financial detriment to the public

The following are examples of some of the more widely used Upjohn preparations space does not permit discussion of all the unacceptable products of this firm

**Citrocarbonate**—This is stated to be "An alkaline effervescent mixture of organic salts of Lime Potassium Sodium and Magnesium properly balanced" and was formerly known as "Tribasic Citrocarbonate" According to the advertising matter "Each teaspoonful (about 60 grains, 4 Gm) when dissolved presents approximately 12½ grains (0.8 Gm) free sodium bicarbonate 28 grains (1.8 Gm) sodium and potassium bicarbonates as citrates and tartrates 2½ grains (0.162 Gm) calcium lactate with correct proportions of phosphates, sulphates and magnesium Contains about 2% sodium chloride" Nowhere in the extensive advertising material on this product is there a complete quantitative statement of composition Just how sodium and potassium bicarbonates can be represented in solution as citrates and tartrates is not quite clear (presumably the latter salts are formed during effervescence the citrates would be oxidized in the body to carbon dioxide and water but the tartrates are poorly absorbed and hence would be practically unavailable and are not readily burned in the body at best) It must indeed have been an epoch-making discovery that indicated the "correct proportions" of phosphates sulphates and magnesium, unfortunately this great contribution has not yet come to the attention of the Council It is said that "Citrocarbonate contains all those elements which normally preserve physiological alkalinity so proportioned as to approximate normal blood plasma ratios" Just what value there can be in the administration of ions in fixed proportion in this way is not apparent, the food intake would immediately and considerably disrupt this exquisite balance The body economy has somehow managed these millions of years to maintain its own ionic equilibrium The Council knows of no indications in conditions in which ordinarily alkaline therapy is of benefit for supplying salts other than those of sodium and occasionally those of calcium Contrary to the emphatic statements of the firm there is no reliable evidence that harm has come from the intelligent administration of sodium bicarbonate alone When alteration of the normal ionic equilibrium does

occur in disease the normal ratios of cations would no longer maintain. If we follow the Upjohn logic correctly, the way to restore the equilibrium is to administer the ions in the ratios occurring in normal blood obviously, if some cations are relatively more deficient than others the former should be supplied in relatively greater quantities. Citrocarbonate still throws the burden of compensation on the selective physiologic mechanisms of the body. It is therefore quite absurd to administer so "carefully adjusted" a mixture when the regulatory organs must perform their selective functions anyway.

In the advertising literature occurs the following statement:

*Making it Easier to Drink Enough Water*

Because of its palatability Citrocarbonate may be used to advantage in much diluted form when a large or measured intake of water is one of the requirements. It frequently becomes quite a monotonous proceeding for a patient to drink say 8 or 12 glasses of water a day. It aids matters considerably to instruct that half of these drinks be taken with a teaspoonful of Citrocarbonate in a full glass of cold water. This gives variety and adds palatability and snap to the draught while the diuretic and systemic effects of the water are correspondingly enhanced.

It is well known that the administration of large quantities of water, when this is done therapeutically or when it is necessary to replenish the water loss of profuse sweating may result in symptoms of alkalosis, owing to a lack of chloride. It is also well known that the addition of small quantities of sodium chloride to the drinking water renders it sufficiently palatable and prevents or alleviates the distressing symptoms. In fact the latter is now so widely appreciated that it is standard practice among blast-furnace workers, miners and others who must work in surroundings of high temperature yet for the effective table salt, physicians are urged by the Upjohn Company to substitute the proprietary Citrocarbonate which contains only 2 per cent of sodium chloride and enough base considerably to enhance the induced alkalosis!

To many persons Citrocarbonate affords a not unpleasant beverage in fact it may be said to appeal to some palates not wisely but too well. This is particularly true in these days of widespread belief in the efficacy of alkaline therapy in the prevention of colds influenza and related disorders. In this the Upjohn Company has not been entirely guiltless witness

"Citrocarbonate  
— to prevent  
— to abort  
— to alleviate  
'COUGHS and COLDS'"

In fact, in its earlier days, Citrocarbonate aspired to the virtues of a panacea.

ALKALIES are of such general usefulness in infections of various kinds that a tentative use of Citrocarbonate should be worthwhile in baffling cases of doubtful diagnosis.

In other words, when in doubt, don't find out! Try Citrocarbonate!

And even in the most recent literature of this firm this alkaline mixture is indicated as being therapeutically useful in a variety of diseases, the list of which resembles in scope if not in detail, the index to a modern textbook on medicine. Yet, in extenuation, the qualifying footnote should be quoted:

Not that the list is exhaustive nor that alkali is always indicated. The thought is to set forth the great range of possible usefulness for Citrocarbonate when applicable. Alkaline therapy is not for any disease as such it is really an attempt to reconstitute the electrolyte and water structure of the body fluids which is the basis for colloid chemistry and hence of cell function a restorative measure worthy of consideration whenever the integrity of the body fluids has been impaired by disease, drugs, diet or other cause.

Thus, with a fine similitude of modern, if somewhat obscure, science do we progress! It is indeed unfortunate that the Upjohn Company considers it necessary to invoke the hocus-focus of its particular brand of colloid chemistry as a background for the exploitation of a shotgun mixture.

Space is not available for discussion of the many other extravagant claims made for this preparation.

The Council declared Citrocarbonate unacceptable for inclusion in N. N. R. because it is a mixture of semisecret and unscientific composition, containing an excessive number of active ingredients (rules 1, 2 and 10), marketed with extravagant and unwarranted therapeutic claims (rule 6) under a misleading and uninformative name (rule 8).

*Acetonyl*—One might judge from this name that this preparation is in some way related to acetone yet it is said to constitute "Granular Effervescent Alkaline Acetylsalicylates." Each teaspoonful ('about 60 grains") of this mixture in 6 ounces of cold water is stated to represent 'Acetylsalicylic Acid (as the sodium salt) 7½ grs together with the bicarbonates, citrates, and tartrates of sodium, potassium, calcium and magnesium having a combined systemic alkalizing effect equivalent to 33.5 grs sodium bicarbonate." In the 1931 catalogue it was claimed 'In most conditions in which acetylsalicylic acid is used its combination with alkaline treatment is more effective than is the acetylsalicylic acid itself in tablet form. This is explained in part by its more prompt absorption. Of greater importance is the fact that acidosis is commonly present in conditions calling for acetylsalicylic acid, and where it does exist its tendency is to increase pain and irritability. The formula is so calculated as not only to insure absorption and elimination of the acetylsalicylic acid without drawing on the alkaline reserves of the body, but to provide a systemic alkalizing effect as well.' Again the specter of acidosis! There is no good evidence that the administration of alkalis with salicylates modifies their systemic effects in any way it does diminish gastric irritation. Certainly the equivalent of 33½ grains (2.2 Gm.) of sodium bicarbonate for each 7½ grains (0.5 Gm.) of acetylsalicylic acid must be considered excessive. There is, furthermore, no satisfactory evidence for the statement that 'acidosis is commonly present in the conditions calling for acetylsalicylic acid. The quantities of the various alkaline salts present are not declared hence the preparation must be considered semisecret it is apparently also unnecessarily complex.

In the 1933 catalogue it seems no longer necessary to explain the principles that guided the Upjohn Company to the preparation of this mixture the following statement is now deemed sufficient 'Acetonyl is analgesic and antipyretic and is particularly useful in such affections as neuralgias, headaches and similar conditions as well as in colds, influenza, and fevers." And, one may add so are ordinary tablets of acetylsalicylic acid.

Not a few individuals are hypersensitive to salicylic acid preparations. Many if not most, such individuals sooner or later learn of this idiosyncrasy and therefore avoid such medication or at least take it only in tolerable dosage. Here we have another salicylate mixture marketed under a name nondescriptive of its active component, self medication to the point of toxicity might readily occur, particularly as the solution is not unpalatable to many persons.

For this reason and for others identical with those that determined the Council's action in the case of Citrocarbonate, Acetonyl was declared unacceptable for N. N. R.

*Salicionyl*—This is claimed to be "A granular effervescent salt presenting sodium salicylate in such a way as to reduce the incidence of those unpleasant features which complicate the use of salicylates alone. Each heaping teaspoonful (about 60 grains) when dissolved, presents approximately 10 grains of sodium salicylate with 20 grains of free alkaline bicarbonate, plus a mixture of the citrates and tartrates in proper balance to assure systemic alkalization. The alkalizing effects of Salicionyl, nearly equal to those of Citrocarbonate, are helpful in meeting the acidotic [sic] tendencies which mark the conditions for which salicylates are given, such as rheumatic fever, tonsillitis, and other infections known to have an acidotic background [italics ours]."

It is obvious that the objections made for Acetonyl apply also to this preparation. One wonders why the firm should market this mixture if the advantages claimed for Acetonyl are all they were stated to be.

The Council therefore declared Salicionyl unacceptable for New and Nonofficial Remedies.

*Bromonyl*—This is another granular effervescent salt. It is stated, Each teaspoonful (about 60 grains) when dissolved in six ounces of cold water, presents a palatable carbonated draught approximately equivalent to Sodium Bromide 9.50 grs Calcium Bromide 3.75 grs Potassium Bromide 2.50 grs. The solution has a systemic alkalizing effect (as citrates and tartrates) equivalent to 27 grains of sodium bicarbonate."

The idea that a mixture of several bromides is of greater therapeutic usefulness than sodium bromide alone was long ago discarded, yet a number of pharmaceutical manufacturers seem not yet to be aware of it. Like the preceding Upjohn preparations, Bromonyl is of semisecret composition, and the name is objectionable. Although it is recommended in dosages equivalent to from 60 to 75 grains (4 to 5 Gm.) of bromine per day, no mention is made of the possibility of bromidism—which indeed has occurred following the use of this preparation. Its palatability would be likely to lead patients to indulge in it too freely. The rationale of combining large quantities of alkali with bromide medication is not apparent.

Bromonyl is not acceptable for New and Nonofficial Remedies because it is apparently an unnecessarily complex mixture of semisecret composition (rules 1, 2 and 10) sold under a misleading name (rule 8).

The Upjohn Company also markets *Bromonyl with Acetylsalicylic Acid* and *Bromonyl with Barbitol*, these are even less acceptable than the parent mixture; they involve fixed ratios of bromide with acetylsalicylic acid in one case and of bromide with barbitol in the other. Because of differences in the rates of elimination of these substances from the body, dosage in fixed ratio is irrational.

**Ointment Scabicide**—Ointment Scabicide is said to contain 'the polysulphides of potassium'. No statement is made as to which or how much of the four potassium polysulphides are present in this ointment. The alkaline sulphides have long been known as depilatories; although the potassium salts are not as effective in this respect as some of the others, they are consequently effective also in dissolving the superficial layers of the skin. Aside from the decidedly unpleasant odor associated with the liberated hydrogen sulphide, one would hesitate to anoint the entire body with a preparation having such keratolytic properties. It is admitted in the advertising that more than one application may produce dermatitis; one is inclined to believe that, in some persons, even one application might cause inflammation. A member of the Council has seen severe generalized dermatitis from self medication with this mixture. The claimed advantage of rapid action would hardly compensate for the possible deleterious effects of this ointment.

Scabicide was declared unacceptable for New and Nonofficial Remedies because it is a semisecret preparation (rules 1 and 2) apparently of unscientific composition (rule 10), marketed with a therapeutically suggestive name which has frequently led to self medication by the public (rules 4 and 8).

**Kerolysin**—Another therapeutically suggestive name. Kerolysin is said to contain 'Acid Benzoic 12%, Acid Salicylic 6%, Thymol 1¼% in a suitably adapted ointment base'. This is obviously nothing but a modification of the well known Whitfield's ointment; certainly not deserving a proprietary name.

This very potent preparation (the benzoic and salicylic acid contents are even greater than those of the Whitfield ointment) has been responsible in many cases for severe local tissue destruction, particularly in patients who were self medicated. Furthermore, Kerolysin is recommended as 'a valuable aid as a deodorant, antiseptic and antipruritic in the treatment of a number of conditions which may or may not be dependent upon fungicidal infection such as sweaty feet, soft corns, bromidrosis, dyidrosis, hyperidrosis, axillary irritation, or eczema, pruritis and etc.'

Needless to say, the use of such a corrosive preparation in any of these conditions deserves hearty condemnation.

It is also stated: 'Let the patient use persistently until sound skin is regenerated.' Those who have had experience with local medication with the active components of Kerolysin know the severe tissue destruction that follows their 'persistent' use.

The Council declared Kerolysin to be unacceptable for New and Nonofficial Remedies because it is an unessential modification of a well known mixture, marketed with unwarranted therapeutic claims under a proprietary, therapeutically suggestive name, uninformative of its essential constituents (rules 4, 6 and 8).

**Super D Cod Liver Oil**—Super D is said to be assayed by the U S P method for vitamin A potency and to contain not less than 25,000 units per ounce. It is said also to represent 'a vitamin D potency of not less than 10,000 units per ounce, controlled by the McCollum line test, and secured by special methods of selection and by the addition as required of vitamin

D." It is stated to contain a small amount of flavoring material. The vitamin D assay units are not qualified as to magnitude and hence are essentially meaningless (although judging from the description in the recent advertising literature these are probably intended to mean A D M A units). It is not stated how the vitamin D is added, whether as viosterol or as a concentrate of cod liver oil, or by irradiation or in some other way. The preparation appears, therefore, to be semisecret. The name may or may not indicate that this may be a fortified oil, it requires careful reading of the description to determine this.

It seems that the oil may or may not be fortified as the firm deems it expedient; it is claimed that The Super D of this date [November 1931] has a natural potency of at least 10,000 units of vitamin D per ounce.

The name "Super D" conveys an implication of superiority not warranted by any evidence available to the Council; this preparation appears to be no better than—if as good as—products accepted for New and Nonofficial Remedies and sold under much more modest and informative names and of which the potency is clearly stated. Physicians would do well to restrict their cod liver oil prescriptions to those preparations listed in New and Nonofficial Remedies, of which there is an ample number in this way they may be assured of the use of products the potencies of which have been definitely established and are indicated in unmistakable terms. They would also be dealing with firms which market their products in accordance with the rules of the Council.

Super D Cod Liver Oil was declared unacceptable for New and Nonofficial Remedies because of its semisecret composition and indefinitely designated vitamin potency (rules 1 and 2) and because of its objectionable name (rule 8).

## Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary

### SUNRISE PANCAKE FLOUR

**Manufacturer**—Concordia Milling Company, Concordia, Kan.

**Description**—A self rising pancake flour containing soft and hard wheat flours, sodium bicarbonate, calcium acid phosphate, dextrose salt and powdered skim milk.

**Manufacture**—The ingredients are mixed in a batch mixer and automatically packed in bags.

**Analysis**—(submitted by manufacturer) —

	per cent
Moisture	12.3
Ash	4.4
Fat (ether extraction method)	1.2
Protein (N x 6.25)	10.7
Crude fiber	0.6
Reducing sugars as invert sugar	0.4
Sucrose	1.8
Carbohydrates other than crude fiber (by difference)	70.8

**Calories**—3.4 per gram 97 per ounce

**Claims of Manufacturer**—For making pancakes and biscuits

### EDDY'S PAN DANDY BREAD

#### EDDY'S TWIST LOAF

**Manufacturer**—Eddy Bakeries, Helena, Mont.

**Description**—White breads made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from patent flour, water, sucrose, powdered skim milk, butter, salt, yeast and yeast foods containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate and buttermilk, calcium phosphate and ammonium tartrate.

**Claims of Manufacturer**—Conform to the United States Department of Agriculture definition and standard for white bread. The only shortening used is butter.

WHITE HOUSE NATURAL BROWN  
RICE FLAKES

(FLAVORED WITH SUGAR, SALT AND MALT)

*Manufacturer*—Standard Rice Company, Inc., Houston, Texas*Description*—Cooked, flaked and toasted brown rice, flavored with sugar salt and malt syrup*Manufacture*—Natural brown rice containing the natural bran with the formula proportion of sucrose, salt, malt syrup and water is steam cooked in revolving sealed steel drums. The cooked mass is broken into separate granules, which are dried to a moisture content suitable for their flaking between steel rolls. The flaked rice is toasted in revolving ovens, is passed over screens to remove fine material, and packed in wax-paper wrapped cartons*Analysis* (submitted by manufacturer) —

	per cent
Moisture	3.1
Ash	4.3
Fat (ether extraction method)	2.0
Protein (N $\times$ 5.95)	8.5
Crude fiber	0.7
Carbohydrates other than crude fiber (by difference)	81.4

*Calories*—3.8 per gram 107 per ounce.*Vitamins*—Biologic assay shows the rice flakes contain considerable vitamin B approximating that of brown rice

## PET KOKO

*Manufacturer*—Pet Milk Company, St. Louis*Description*—Mixture of evaporated milk (four parts) and a chocolate and malt flavored syrup (one part) containing sucrose water extract of cocoa and malt syrup sterilized*Manufacture*—The cocoa extract is made by digesting cocoa in hot water, the decoction is filtered. The filtrate is admixed with sucrose and malt extract. The chocolate and malt flavored syrup is mixed with Pet Evaporated Milk in the stated proportions, is canned and is processed at 116-121 C until sterile*Analysis* (submitted by manufacturer) —

	per cent
Moisture	64.4
Total solids	35.6
Ash	1.1
Fat	6.3
Protein (noncaffeine and nontheobromine N $\times$ 6.25)	5.6
* Cocoa red	0.2
Theobromine and caffeine	0.01
Carbohydrates (essentially sucrose lactose and maltose) (by difference)	22.6

\* Ulrich method (J. A. O. A. C. 1916 page 550)

*Calories*—1.7 per gram 48 per ounce*Claims of Manufacturer*—For the preparation of chocolate and malt flavored milk drinks and other food recipe preparationsWHITE ROCK BRAND CRYSTAL  
TABLE SYRUP

(CORN SYRUP FLAVORED WITH ROCK CANDY SYRUP)

*Manufacturer*—Wheeler-Barnes Company Minneapolis*Distributor*—Andrew Kuehn Company Sioux Falls S. D.*Description*—Corn syrup flavored with rock candy syrup (the same as White Oak Brand Crystal White Syrup 85 per cent Corn Syrup 15 per cent Rock Candy Syrup THE JOURNAL, Oct 15, 1932, p 1353)

## PRINCESS CORN MEAL

*Manufacturer*—Blanton Milling Company Indianapolis*Description*—Corn meal practically free from corn germ and bran. The same as Evans E-Z Bake Corn Meal (THE JOURNAL, March 18, 1933, page 819)

## EZEMADE BISCUITS—A MIX

*Manufacturer*—Zanol Products Company, subsidiary to the American Products Company, Cincinnati*Description*—Self-rising flour containing patent flour (bleached), vegetable shortening sucrose, powdered skim milk, salt, sodium acid pyrophosphate, sodium bicarbonate and calcium acid phosphate.*Manufacture*—The ingredients in definite proportions are thoroughly mixed in a batch mixer and packed in wax paper inserts in wax paper wrapped cartons. The shortening used is

specially modified to increase its stability against the development of rancidity. The product has been tested for rancidity after six months at ordinary room temperature and at 35 C, no rancidity developed under these conditions

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	10.2
Ash	3.6
Salt	1.5
Fat (ether extraction method)	12.8
Protein (N $\times$ 6.25)	7.6
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	65.6

*Calories*—4.1 per gram 116 per ounce*Claims of Manufacturer*—Requires only the addition of liquid for the preparation of biscuit dough

## REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING  
REPORTS  
RAYMOND HERTWIG Secretary

## NOT ACCEPTABLE

## CERTAINTY HEALTH BRAN

The Beaver Valley Milling Company, Des Moines, Iowa submitted to the Committee on Foods an "all bran" product prepared from wheat called "Certainty Health Bran"

*Discussion of Name and Label*—The name Certainty Health Bran and the prominent label claim "For your health's sake" signify that this bran will assure health to the user, a type of claim no more warranted for bran than for any other food, no food provides or assures health. A complete diet adequate in all food essentials is necessary for health, but health depends on many other factors than nutrition. The claim that the product is 'sterilized' is not in keeping with the method of preparation described by the manufacturer. A sterilized food is free of viable organisms. It is further stated that 'many doctors insist on the use of bran as an aid to digestion and the best known of nature's stimulants to aid the functioning of the bowels as it cleanses the digestive organs and eliminates the poison which often clogs the system'. Doctors do not insist on the use of bran as an aid to digestion, bran is not a digestive aid. The attributing of a claim of this nature to doctors is especially a misleading presumption. It is appropriate to claim that constipation due to insufficient roughage in the diet will yield to bran eaten regularly. Bran is not 'the best known of nature's stimulants to aid the functioning of the bowels' nor can bran be depended on "to cleanse the digestive organs."

The name and claims are inappropriate, misinformative and misleading. The manufacturer after being advised of the Committee's report has not shown willingness to change the name or claims. This product will therefore not be listed among the Committee's accepted foods

## NOT ACCEPTABLE

JOHNSTON GRAHAM CEREAL DOTS  
JOHNSTON GRAHAM CRACKERS

The Robert A. Johnston Company, Milwaukee, submitted to the Committee on Foods a cereal called "Johnston Graham Cereal Dots," prepared from patent flour whole wheat flour, sucrose, malt extract, lard, brown sugar, molasses, baking soda, salt, annatto coloring, ammonium bicarbonate, imitation vanilla (vanillin and coumarin), magnesium carbonate and sodium sulphite, and a cracker called "Johnston Graham Crackers" prepared from patent flour, whole wheat flour sucrose, malt extract, lard, brown sugar, molasses, baking soda, salt, honey, annatto coloring ammonium bicarbonate, imitation vanilla (vanillin and coumarin), magnesium carbonate and sodium sulphite.

*Discussion of Names, Label and Composition*—The names "Graham Dots" and "Graham Crackers" signify that whole wheat is the only farinaceous ingredient. This is contrary to the fact since whole wheat is in much smaller proportion than white flour in the manufacturing formula. The term "graham" is associated with ground whole wheat or ground whole wheat products as indicated by the United States Department of Agriculture definitions and standards for whole wheat flour

and whole wheat bread. In these definitions "whole wheat flour" and "whole wheat bread" are synonymous with "graham flour" and "graham bread." According to the names, the public can rightfully expect whole wheat flour to be the sole wheat ingredient of the cereal and crackers. The added annatto golden coloring gives a color simulating that of a whole wheat product and thereby would create the impression of a greater whole wheat content than is actually present and increases the misleading nature of the names. These are not a true graham cereal or a true graham cracker but a white flour-graham cereal and a white flour graham cracker and should be named accordingly. The sodium sulphite and magnesium carbonate components are not essential or appropriate ingredients of foods. The label statement "with milk or cream they are rich in bone building calcium" indicates that the Cereal Dots are rich in calcium, which is incorrect and misleading. The milk will provide essentially all the calcium but not the cereal. The names and label claims are misinformative and deceptive, and the added magnesium carbonate and sodium sulphite ingredients are inappropriate, unnecessary components of foods.

The manufacturer was informed of the Committee's report but is unwilling to change the names for business reasons or eliminate the sodium sulphite from the formula. These Graham Crackers and Cereal Dots will therefore not be listed among the Committee's accepted foods.

#### NOT ACCEPTABLE

##### HEALTH-E ICE CREAM CONES

The Illinois Baking Corporation, Chicago submitted to the Committee on Foods an ice cream cone called "Health-E Ice Cream Cones" prepared from flour, sucrose cocoa, shortening, tapioca, chocolate syrup, dried milk, salt, imitation vanilla and certified coloring.

*Discussion of Name and Claims*—The name "Health-E Cones" implies the presence of specific health values. The cones are no more healthy or by virtue of composition related with health than are any other wholesome foods. Names of this character lead to misleading "health food" advertising, as exemplified by the claims "individually wrapped for health's sake" and "contains vitamin D for health" used for these cones. The manufacturer has not furnished information to substantiate a vitamin D claim nor do the ingredients of the cones justify such a claim.

The manufacturer was advised of the Committee's report but is unwilling to change the name for business reasons. These Health E Cones will therefore not be listed among the Committee's accepted foods.

#### NOT ACCEPTABLE

##### PETRA'S LAXO BREAD

The Petra Baking Company, Olean N Y submitted to the Committee on Foods a bread containing white, whole wheat and rye flours, sweetened condensed skim milk, wheat bran, pulverized flax seed sucrose, salt, yeast and malt syrup.

#### DISCUSSION OF NAME AND LABEL

The name "Laxo" does not identify the ingredients which differ from those of the usual breads. The public is entitled to know the composition of the compound foods it consumes. A descriptive statement identifying the unexpected ingredients should accompany the trade name a procedure which tends to prevent misleading and misinformative advertising. The prominent label claim "Eat Laxo Bread regularly and eliminate constipation" implies that this bread will correct constipation due to any cause. The bread furnishes more indigestible residue than does white bread but less than whole wheat bread, the product, therefore, may be expected to be helpful for counteracting constipation due to insufficient roughage in the diet but not to constipation due to other causes. To inform the users of the bread properly, an appropriate claim is that Laxo Bread eaten regularly will aid in counteracting constipation due to insufficient bulk in the diet.

The company was advised of the Committee's recommendations but has displayed no willingness to comply, this bread will therefore not be listed among the Committee's accepted foods.

#### NOT ACCEPTABLE

##### CREAMO AND BUTTER-NUT BREAD BRANDS

The Muller Bakeries Inc., Grand Rapids, Mich., submitted to the Committee on Foods several brands of white breads with the trade names "Creamo" and "Butter-nut" containing patent flour, water, lard, salt, powdered skim milk, yeast, malt syrup and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

#### DISCUSSION OF NAMES

*Butter-Nut Brand*—The name "Butter-Nut" presumably indicates that the bread contains either butter and nuts' or butternuts and in such quantity as to give the product distinctive physical and nutritional characteristics because of such ingredients and different from the customary white bread. The baking formula contains neither butter, nuts nor butternuts. The name is considered inappropriate and misleading.

*Creamo Brand*—The name "Creamo" implies the presence of cream in substantial quantity in the baking formula and sufficient to give the bread qualities and nutritional values not possessed by the usual white bread. Cream is not an ingredient and skim milk is the only milk product constituent. The name is inappropriate and misleading.

The bakeries were advised of the Committee's recommendations but they are not willing to change the brand names. These breads will therefore not be listed among the Committee's accepted foods.

#### NOT ACCEPTABLE

##### PATCH'S SUGAR OF MILK (LACTOSE)

The E L Patch Company, Boston, submitted to the Committee on Foods a canned lactose of high purity called Patch's Sugar of Milk (Lactose).

*Discussion of Label*—The container label presents explicit infant feeding formulas for infants of from 1 to 9 months. The promulgation of feeding formulas in lay advertising is considered to be in conflict with the best experience, authoritative judgment and basic principles in infant feeding. The feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions printed materials, or advice of any person other than the attending physician who can personally observe the condition of the baby may seriously endanger the health of the infant. The feeding of the baby during the first year is of fundamental importance to its health, wrong feeding may be disastrous. Every infant, the breast fed and doubly so the artificially fed, should be under the supervision of a physician experienced and skilled in the care and feeding of infants. The manufacturer when informed of these opinions expressed himself as unwilling to remove the feeding formulas from the container label for merchandising reasons. Patch's Sugar of Milk (Lactose) will therefore not be listed among the Committee's accepted foods.

#### NOT ACCEPTABLE

##### BUTTER-NUT BREAD

The Gravem Inglis Baking Company, Inc. Stockton Calif., submitted to the Committee on Foods a white bread made by the sponge dough method, called "Butter-Nut Bread," composed of flour, water, shortening, dry skimmed milk, yeast, salt and a yeast food containing calcium sulphate, ammonium chloride sodium chloride and potassium bromate.

*Discussion of Name and Advertising*—The name "Butter-Nut Bread" indicates that the bread contains either butter and nuts' or 'butternuts' and in such quantity as to give the product distinctive physical and nutritional characteristics because of such ingredients and different from the customary white bread. The baking formula does not contain butter, nuts or butternuts. The name is considered inappropriate, misinformative and misleading.

The manufacturer, when informed of this opinion expressed himself as unwilling to change the name in accordance with the Committee's recommendations. This bread will therefore not be listed among the Committee's accepted foods.

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 20 1933

## A NEW COMPARISON OF URINE AND PERSPIRATION

In an older period of clinical medicine, the skin and the kidneys were usually considered together as eliminatory organs for the body. Consequently, when difficulties in the excretory functions of the renal structures arose it was not uncommon to spur the skin to act in a vicarious role as far as possible. Diaphoretics or sudorifics were administered in many instances of nephritis with the hope that the resulting profuse perspiration might help to remove "waste products" that were ordinarily represented in the urine. Presently it began to be realized that although sweating may help to bring about loss of water, as in the anasarca of nephritis, and that it unquestionably facilitates the removal of heat, the amount of saline and nitrogenous waste thus carried away does not bulk large. For many years, therefore, little attention was paid to the components of sweat other than water. Perspiration was associated primarily, as it doubtless deserves to be, with the heat regulation of the body.

From time to time, however, records of the composition of the sweat, freed from epidermal debris as far as possible, have revealed the presence of familiar components of the blood and urine. Urea, uric acid and lactic acid, for example, were unmistakably recognized, even though the proportions found were small. Dextrose has been detected in cases of diabetes mellitus. Such information suggests that under certain circumstances the skin functions in an eliminatory manner. In fact, it has been stated that in pathologic disorders such as cholera and uremia the sweat glands may excrete urea in such amounts that examination of the skin may disclose crystals of the substance. Recently Mosher<sup>1</sup> made comparative analyses of urine and sweat collected simultaneously from man. When persons whose bodies had been washed thoroughly were placed in sweat chambers maintained at from 40 to 50 C (104 to 122 F), 250 cc (about half a pint) of sweat could easily be obtained in little

longer than half an hour. Qualitatively, perspiration was found similar to urine in composition, though the relative amounts of the various components in the two solutions varied considerably. Urine is a much more concentrated solution, containing from three to five times the amount of total solids and from five to nine times the amount of organic matter.

It has been pointed out by Mosher that, although much attention has been directed to the study of the chemical components of human urine and blood with the aim of establishing relationships between the presence of certain components and variations in the percentages of the normal constituents with pathologic disorders, few similar investigations have been conducted with perspiration. This is indeed surprising, he adds, when it is considered that many dermatologists ascribe certain skin diseases to unknown chemical substances or to an abnormal balance of the usual constituents in the sweat. Mosher argues that, before any useful investigations on the influence of perspiration on the etiology of skin disorders can be scientifically instituted, more exact information as to the normal components of sweat is required, particularly the nitrogen fraction. His study is a contribution in this direction.

## THE RELATION OF TRAUMA TO PARALYSIS AGITANS

Since James Parkinson wrote his classic "Essay on the Shaking Palsy" (1817) there has been much discussion as to the cause and pathogenesis of paralysis agitans. Recently the relation of trauma to the development of Parkinson's syndrome has been discussed in French and German literature. Ruhemann<sup>1</sup> found that of thirty-five cases of paralysis agitans seven were traceable to trauma. Oppenheim<sup>2</sup> wrote that injuries to the head, sacrum or an extremity, especially a crushing injury of the nerves, may be the cause of paralysis agitans. Catola<sup>3</sup> comments on the difficulties in evaluating the relation between trauma and disease of the nervous system from the medicolegal point of view but admits that craniocerebral trauma may provoke vascular lesions, necrosis and neuroglial proliferation.

Recently Naville and de Morsier<sup>4</sup> made an extensive report on trauma as a factor in Parkinson's disease. They studied two groups of cases: first, a series of thirty-two patients with a history of cranial trauma; second, a group of forty-two patients subjected to peripheral trauma. They classified the cases of cranial trauma as follows: (1) cases of trauma followed by parkinsonism apparently at least due to contusional encephalitis; (2) cases of aggravation by trauma of existing Parkinson's disease, encephalitis or hereditary

<sup>1</sup> Ruhemann Konrad. Ueber Schüttellähmung nach Unfällen. *Berl klin Wchnschr* 41: 332, 1904.

<sup>2</sup> Oppenheim Hermann. *Lehrbuch der Nervenkrankheiten* 1923 p. 2069.

<sup>3</sup> Catola Junio. Sur les rapports pathogéniques entre les traumatismes et certaines maladies organiques du système nerveux central. *Encephale* 27: 292 (April) 1932.

<sup>4</sup> Naville François and de Morsier Georges. Traumatismes et syndromes parkinsoniens. *Ann de med. leg.* 12: 165 (April) 1932.

<sup>1</sup> Mosher H. H. Simultaneous Study of Constituents of Urine and Perspiration. *J Biol Chem.* 99: 781 (Feb) 1933.

predisposition, (3) cases of trauma during the development of an infectious encephalitis followed by paralysis agitans, (4) cases of psychic trauma. They note that the disease may appear from several days to three months or more after a cranial trauma, most frequently cerebral concussion. In most instances the tremor and hypertonia appeared in the midst of other symptoms usual after cranial trauma, such as headache, cervical rigidity, fatigue, vertigo or insomnia. There were also mental abnormalities, particularly depressive states with nocturnal agitation. In the series of peripheral injuries studied by Naville and de Morsier, various kinds of trauma were concerned, such as contusions, fractures, dislocations, muscle tears, electrical shock, infected wounds and crushing injuries. Once begun, the syndrome did not differ from the nontraumatic type of paralysis agitans. Usually there was not complete recovery between the time of the trauma and the appearance of first symptoms of paralysis agitans which most frequently developed several days or weeks after the injury. The tremor and hypertonia always appeared first in the injured limb, and when two regions were hurt simultaneously the tremor appeared in the two areas at the same time. As concerns age, 21 per cent occurred in persons under 40 years, while in the non-traumatic type of paralysis agitans only 10 per cent were under this age. Mental disturbances were absent in patients who developed paralysis agitans after peripheral trauma. The extension of the symptoms occurred on the injured side.

Minovici, Paulian and Stanesco<sup>5</sup> are more conservative in their interpretation of the part of trauma in causing paralysis agitans. They think that it may be a contributory factor but not necessarily a direct cause. They point out that there is as yet no agreement as to the nature and localization of the lesions. The muscular incoordination in this disease has been ascribed to lesions in the extrapyramidal tracts and basal ganglions. However, pathologic changes have been found in other parts of the brain, so that this aspect of the subject is still controversial. They affirm that it is rare to encounter all the elements of Parkinson's disease directly after trauma, further, that the olivopontocerebellar syndrome and inflammation of the striate bodies may be confounded with Parkinson's disease, which has an identity all its own. The importance of emotional shock as a cause of this disease is stressed, patients have been observed in whom the classic symptoms of paralysis agitans occurred soon after a psychic shock. It is acknowledged by these writers that trauma, after all, may favor the development of paralysis agitans by indirect effects of contusion, shock, hemorrhage or meningeal irritation. While the relation of trauma to paralysis agitans still remains an open question, the problem certainly deserves further and close study on account of its practical importance.

## COMMERCIAL ASPECTS OF BACTERIOPHAGE THERAPY

The premature commercial exploitation of "bacteriophage" has no doubt induced expenditure of considerable sums for therapeutically inert preparations of bacteriophage-lysed bacterial filtrates. Laboratory scientists suggested the subtle and misleading name "bacteriophage." True, certain bacterial filtrates introduced into a limited volume of fluid culture medium will in many cases cause the suspended bacteria to die. The dead bacteria disintegrate. After disintegration a hundred times the original lytic titer is demonstrable in the culture medium, together with numerous other autolytic products.

Ignoring possible enzymes, hormones, genes and other growth factors, imagination pictured this lysis as the result of a hypothetical bacteria-digesting virus. A specifically active lytic agent of this character would logically not affect other factors in the animal body. It was argued that it might penetrate to the remotest corner of infected tissues in search of its specific diet. The well known fact that test-tube lysis does not take place in the presence of gelatin, egg white or numerous other colloids was disregarded. The well confirmed evidence that similar inactivations take place in the presence of mucus, fibrin, pus, blood serum, erythrocytes, fixed tissue cells and certain urinary crystalloids was also ignored by commercial interests, in spite of the fact that voluminous data have been published during the last twelve years.<sup>1</sup>

The commercially promoted reading matter also carefully evaded references to the well confirmed evidence that limitation of volume is a necessary factor in test-tube lysis. In other words, "bacteriophage" has no appreciable injurious effects on homologous bacteria until the extrabacterial concentration of bacteriophage is raised to a certain critical level.<sup>2</sup> Publication of this fact might have suggested to prospective purchasers that the necessary critical concentration could rarely be reached or maintained in any tissue supplied with a capillary circulation, or in any urinary or cerebrospinal space with its constant lavage with new fluid.

Under the numerous test-tube conditions in which lysis does not occur, "mutation" or "adaptations" of the exposed bacteria take place, with the production of bacteriophage-resistant strains. These strains cannot be lysed even under most favorable test-tube conditions. The commercial literature failed to announce that 90 per cent of all typhoid bacilli freshly isolated from typhoid stool or typhoid blood are bacteriophage-insusceptible variants. One also seeks in vain for any reference to bacteriophage anaphylaxis or to antitherapeutic "negative phases," the well known dangers and contraindicants with certain other protein mixtures or bacterial vaccines.

<sup>5</sup> Minovici, Mina, Paulian, D. D. and Stanesco, I. Contribution à l'étude du parkinsonisme traumatique. *Ann. de méd. lég.* 12: 426 (June) 1932.

<sup>1</sup> A historical outline is presented by Colvin, M. G. *J. Infect. Dis.* 51: 527 (Nov. Dec.) 1932.

<sup>2</sup> Limitations of Bacteriophage Therapy, editorial. *J. A. M. A.* 96: 693 (Feb. 28) 1931. 98: 1190 (April 2) 1932.

Competent investigators who have made impartial and conscientious efforts to determine the clinical value, limitations and dangers of the Twort transmissible lysin marvel at the policy of suppression of scientific fact in the promotion of bacteriophage preparations. If data suggesting limitations and dangers had been suitably set forth in advertising prospectuses, clinical trials might have been limited to certain well defined pathologic conditions, leading eventually to official endorsement, whereas the Council on Pharmacy and Chemistry has not yet accepted such preparations. Moreover, there is a rapidly growing resentment and distrust of the whole bacteriophage promotion, which certainly will delay final clinical evaluation.

Premature exploitation of the Twort lysin is by no means an isolated example of this short-sighted policy. The opsonic index was successfully sold to the medical profession, long before its technical errors were assayed, before any critical test was made of the assumed quantitative parallelism between specific opsonic index and specific immunity. Perhaps a million doses of leukocytic extract were injected before any quantitative tests were attempted to prove that such injection causes anything more than a borderline reaction of negligible therapeutic value. "Anti-cold vaccines" were widely sold commercially and even yet the etiologic factor of common colds is unknown and the evidence of usefulness doubtful. The Council on Pharmacy and Chemistry is a safe guide to follow at a time when all sorts of untried therapeutic plausibilities are being launched on the medical profession.

### Current Comment

#### DANGER IN INTERNAL ADMINISTRATION OF SILVER PREPARATIONS

A timely warning against uncontrolled or indiscriminate use of silver preparations in internal medication has just been uttered by Knack<sup>1</sup> of Hamburg. While the toxic effects of chronic poisoning with silver are not in themselves alarming, the discoloration of the skin, especially that of the face, is unsightly and may seriously interfere with the pursuit of occupation. In the past, silver nitrate was extensively utilized in the treatment of the diseases of the nervous system and of the gastro-intestinal tract. The occasional occurrence of argyrosis as well as a growing conviction that the therapeutic effect of silver nitrate was inferior to other remedial substances lessened its use greatly. Then, with the development of new combinations of silver came a revival of interest in silver therapy. At the same time, manufacturers exploited such products in advertising campaigns. The silver content of some of these preparations is not always to be known from their proprietary names. The indiscriminate attitude toward silver preparations may be due to the fact that the

younger generation of physicians is not familiar with argyrosis. Knack describes two recently observed cases. One patient had taken the not inconsiderable dose of 9 Gm of silver nitrate, which was prescribed for a gastro-intestinal disturbance during the years 1920-1922. The symptoms appeared characteristically late, after a lapse of three years. The diagnosis was made from the typical blackish gray discoloration of the skin and was further confirmed in histologic sections of the skin by the new spectro-analytic method of Walther and Werner Gerlach of Basel. A special predisposition undoubtedly plays a part and occasionally a small dose is capable of producing argyrosis, as is evident from the case reported by Jacksch in which the patient received only 12 Gm of silver nitrate.

#### GLYCERIN AS FOOD

If it is assumed that the average daily intake of fat in the present-day diet approximates 100 Gm, this foodstuff will liberate about one-tenth its weight, or 10 Gm, of glycerin (chemically designated glycerol) in the alimentary tract as a consequence of the lipolytic digestive changes. Glycerin also finds its way into the gastro-enteric canal from other sources, it is mixed with certain commercially processed foods, is present in some pharmaceutical preparations, and is sometimes fed as such, offering through its sweetness a substitute for sugar. It seems almost gratuitous to question the physiologic wholesomeness of a normal digestion product of one of the familiar nutrients, yet this seems to have been done from time to time in the case of glycerin. There are, indeed, published records of untoward effects from glycerin, but in these it is not always clear whether the introduction has been by way of the alimentary tract or whether perchance the product has been administered parenterally. It would not be surprising if subcutaneous or intravenous use of glycerin should lead to untoward consequences. As a recent writer has remarked, numerous examples could be cited of innocuous and even indispensable materials occurring in the gastro-intestinal tract which kill if injected subcutaneously, intraperitoneally or intravenously. Examination of medical writings with this in mind reveals that it is essentially in instances of parenteral administration of glycerin that injurious consequences have been reported. An extensive reinvestigation<sup>1</sup> of the subject, involving the feeding of varying amounts of glycerin to different species, including man, has recently been completed at the department of physiology of the University of Chicago. This shows that glycerin as such can safely be incorporated into the regimen in far larger proportions than that in which it is liberated from even large quantities of dietary fat. It readily replaces carbohydrates, having about the same caloric value. In the case of man, glycerin was fed over a period of fifty days in amounts as large as 110 Gm daily without any demonstrable

<sup>1</sup> Johnson V. E., Carlson A. J. and Johnson Adelaide. Studies on the Physiological Action of Glycerol on the Animal Organism. *Am. J. Physiol.* 103: 517 (March) 1933.

undesirable effects. It did not affect the red or white cell counts or the hemoglobin content of the blood. The temperature was unaffected, and neither the basal metabolism nor the uric acid output was significantly changed. These items are mentioned because they have been the subject of dispute. There have been reports in the past of phenomena—sleeplessness, talkativeness and excitement—resembling manifestations of alcoholic inebriation. The Chicago physiologists, referring to glycerin feeding, somewhat whimsically remark that thus far no signs of addiction have displayed themselves in their subjects.

## Medical Economics

### PRIVATE GROUP PRACTICE

[This series of investigations by the Bureau of Medical Economics will be published in THE JOURNAL in three parts. The second part will appear next week.]

The original source of information for this study was a questionnaire sent to 1,949 secretaries of county medical societies asking for certain information as to the number of groups within their jurisdiction and the nature of the practice in which the groups are engaged. Two hundred and sixty-six secretaries reported the existence of one or more groups within the jurisdiction of their societies. The total number of groups so reported was a little over 500, the indefiniteness was due to the fact that some reports gave '8 or 10' and similar estimates. Later investigation showed that many of these could not be properly classified as examples of group practice, a difficulty that is partially due to the fact that it is almost impossible to formulate any clear or standard definition of a medical group. Moreover, most of those listed were calling themselves "clinics" and were being so considered in their localities.

The replies to this questionnaire give the most complete view of the attitude of members of the medical profession toward various questions involved in group practice and its results that has yet been obtained. That this view is as fair and impartial as could well be obtained is shown by the fact that the proportion of secretaries of county medical societies who stated that they were themselves members of groups is at least equal to the proportion of members of groups in these societies to nonmembers.

One of the questions on the schedule, the answers to which are of significance in determining the probable development and extent of group practice in the near future, was, "Is the number of groups increasing?" Two hundred thirty-five secretaries replied to this question. Of these, 192 said "No" and 42 "Yes." The majority of "No's" would seem to be sufficiently large to indicate that in those localities where group practice already exists it shows slight tendency to increase its scope.

Another point on which there has been much discussion is whether group practice reduces the cost of medical care to the patients. This information was sought through the question, "Has group practice as conducted in your community contributed a practical method of providing medical service at reduced costs to the patient?" Of 230 secretaries who replied to this question, 170 said "No" and 60 "Yes." This would seem to justify the conclusion that of those secretaries who have had an opportunity to judge of the working of group practice the overwhelming majority are of the opinion that it has not reduced costs to the patient.

The next question gives an opportunity to explain these simple negative and affirmative replies. It asks, "In what way has group practice reduced the costs of medical service to the patient?" It may be well to call attention to the fact that this is somewhat of a leading question, as it assumes that group practice has 'reduced the costs of medical care to the patient.' There were 159 replies, of which 69 simply emphasized their

previous negatives by saying "none," "not at all," "in no way," etc., while 12 said that the costs have been increased to the patient by group practice, and 8 gave noncommittal answers, such as 'do not know,' 'opinions differ,' etc. Some of the explanations given of these answers are helpful in understanding the attitude of those who replied.

Reduced overhead—increases individual practice by referring to members of group.

Did not reduce but allowed better service.

Costs patient more money through unnecessary roentgenologic and laboratory work.

Doubt if costs have been reduced. Group practice has been responsible for a higher type of service and keeps the medical man up on his toes more.

Increased unnecessary expense.

Owing to excessive amount of unnecessary laboratory service general consensus is that there has been no saving for the patient.

Excessive overhead holds the costs high.

Has not reduced. More charge to the patient. Examination in clinics cost \$25 to \$50 and in doctor's office \$10.

Not in one case the group not being highly specialized.

In no way. It has reduced our individual expense.

There are fifty-three replies that may be interpreted as indicating an opinion that in some way group practice has reduced the cost of service to the patient, although a few of these answered the previous question in the negative. Thirty-eight listed reduced or no extra charges and greater facility for consultations within the group as a reason for believing that charges have been reduced. The reports of four groups located in small cities cited the saving of traveling expenses by patients who would otherwise go to larger centers of population. Nine stated that a centralized laboratory saves on cost of diagnostic services. Four mentioned possible savings due to a reduction of overhead and an increased number of patients who can be cared for by the same staff.

The affirmative replies may be fairly summed up as making a slight claim for lower charges for equivalent care but insisting that superior facilities and extra consultation service can be furnished without extra charge.

The next question has some indirect bearing on this problem of greater economy of group practice. It reads, "State definitely the objects for which groups are formed in your community (reduction of individual overhead expense, joint ownership of costly equipment, easier access to special consultants or for other reasons)." One hundred and twenty-eight secretaries made some sort of comment on this question. In the analysis that follows it must be remembered that many gave several objects and are therefore counted more than once.

Of these, eighty-eight say that the objects listed in the question were those sought in forming the group. Many of these made additional comment and others who replied to this question gave additional reasons. Eighteen emphasized the possibility of financial gain for the members making such statements as:

'Probably for increasing income of owners.'

'Making money for owner others are on salary basis.'

'Personal gain' (4 replies in substance).

'To obtain greater momentum for more business.'

'To make more money—that's all. To appear big talk big charge big.'

Of the total replies there were forty-four that mentioned improved relations and conditions of practice helpful to the physicians who were members. Of these nine stress the opportunity to go away for vacations or graduate study without disorganization of practice and loss of patients. There are eleven replies that mention certain personal and professional conditions which attracted physicians to groups:

'Opportunity to develop along special line.'

'Personal protection or special benefits accruing therefrom.'

'Better chance for consultation and improvement.'

'To hold together—and aloof from others—a certain group of friends.'

'Practice specialty and keep in touch with other fields.'

'More convenient to practice scientific medicine.'

'Congenial cooperation of social and professional relationship.'

'Personal satisfaction to physician of being able to limit work to one or two branches.'

'A place to practice medicine surgery and obstetrics as it should be done and as cheaply as possible.'

'Physician is able to emphasize his own specialty and can have group of trusted friends and specialists around him.'

A few additional replies do not quite fall in the foregoing classification because they give greater stress to personal and financial reasons, some of which are evidently due to local

situations Three say the group was formed to reach a wider radius of patronage and to meet competition with metropolitan centers One said "To increase individual practice by referring to members of group" Another gave as an object "Lessened initial expense to new-comer in group" Another gave "Reduce dead-beats—overcome local competitive friction" A fourth said that it was "easier to do industrial work."

Thirty-seven replies emphasized benefits to patients as among the objects which led to the formation of groups Of these, fifteen said "better service," and seven others added such qualifications as "quicker," more complete," and "more efficient." Others went into such details as

Necessity of medical accomplishment for which no single individual is equipped mentally or physically

To afford patient medical service by one familiar with case in absence of member without additional cost to patient.

Provide somewhat isolated community with well balanced organization to care for any case too difficult for general practitioner

Elimination of travel to city for consultation. Fees are less than city fees for special work.

To render twenty four hour service for industrial accidents

It seems probable that these replies are sufficiently comprehensive, inclusive of members and nonmembers and distributed geographically as to include practically every reason that has led to the establishment of groups and to give as accurate a picture as is reasonably possible of the motives for the formation of groups

The next four questions were designed to bring out the attitude of the local profession toward group practice Again the impartiality of these replies rests on the fact that a considerable proportion of the secretaries answering were members of groups and that both sides—if there were two sides—were therefore represented This also, to some extent accounts for the sharply antagonistic opinions

The first of these questions asked for a direct answer of "Yes" or "No" to the question "Is this type of medical practice satisfactory to the majority of physicians in your community?" Of 148 who answered only with a direct affirmative or negative, 87 said "Yes" and 61 "No" The comments of those not answering directly added little to the information sought in the following questions "If satisfactory in what respect does your society favor group practice? If unsatisfactory, state the undesirable features of group practice"

To the first question, which assumes the satisfaction of the county medical societies with group practice forty-three secretaries made neutral, noncommittal replies such as "has taken no action" "nothing said," "no expression," and "not interested"

There are twenty-three replies that indicate division or active opposition within the medical society Samples of these comments are

Not satisfactory but tolerated because it interferes little with individuals

Society does not favor

'Impossible to tell O K with those doing group practice.

Sentiment is divided

Objected to by some"

They do not particularly favor it but they just do not oppose it

Is favored in negative sense—tolerated

Many of our men will not even share a building with another practitioner

Society favors group practice as long as those in the group stay confined to their specialty and do not encroach on private practice of general practitioner

No complaint of serious nature

A number are satisfied—others not

The society does not exactly favor group practice nor is it against it

We are divided on the subject. I believe the majority favor individual practice

Some opposition on competition of groups

Satisfactory to the one group

Clinic groups are not particularly criticized but tend to be isolated from general run of practitioners

There are twenty-three replies that may be fairly interpreted as indicating that the secretary considered the opinion of the county medical society to be favorable to group practice. Some of the reasons given for this attitude are

Develops better type of men in profession

Society respects group practice because more complete diagnosis due to better laboratory facilities and cooperation within group

Better feeling among doctors with greater efficiency for individual doctors.

Cooperates with all other members of the society

'Better medicine practiced

'Allows community to have hospital

Better facilities for diagnosis and treatment'

Staffs of both groups are all members of the society and their association has the good will and approval of other members of the society

There is a marked tendency toward group formation and it is favored by the society

Has raised standard of practice in community

It makes for stronger better equipped individuals Makes for stronger medical center Draws patients from larger area

It will be seen that even when asked to state reasons why the medical society favored group practice more than two thirds of those replying gave noncommittal or critical comments and that more than half of the secretaries failed even to express a vote on the direct question of whether group practice is satisfactory to a majority of the physicians in the community where it exists which would seem to justify the conclusion that the general attitude of those members of the profession who have come into direct contact with such practice is hostile or sharply critical The twenty-three positively favorable replies are fewer than the number of secretaries who are members of groups This does not imply that all such favorable replies are from group members for this is not true, but rather that there is a recognition by both members and nonmembers of this general critical or hostile attitude of members of the profession to group practice.

This conclusion is strengthened by the replies to the request "If unsatisfactory state the undesirable features of group practice" Sixty-five secretaries listed one or more such features These fall largely into certain definite classes The largest number criticized the lack of cooperation of groups with other practitioners The nature of these may be judged from the following examples

Eliminates privileges of consultation between members and non members

Too much close communion

Stirs up dissension

Try to keep all work in their own hands"

Isolation of groups

Patients referred to clinic do not return to physician

Unsatisfactory to physicians outside group—competition is strong and control of patients more difficult.

'There is unavoidable jealousy of outside members

Limits choice of consultants

Creates factionalism

The establishment of cliques creating prejudice and jealousy"

We feel that they are not always ethical as far as their relations with outside physicians is concerned

Hinders full cooperation and general good will among physicians.

It is at times unfair because any patient can get confirmation of diagnosis right or wrong Outside doctor is therefore always wrong

There are a number of charges of unethical practices, such as

Unethical competition

Group advertising—solicitation by business manager

High pressure salesmanship

Aggressiveness in procuring patients—indirect methods of advertising

Because of cost of operation has to go after business in many ways unsatisfactory to profession

Has tendency to monopolize and commercialize the practice

Tendency to publicity in the press.

Too much aggression and free advertising

'They have inexperienced men and tell public they have specialists They set themselves up as better physicians and surgeons They advertise directly and indirectly by virtue of these groups

Tendency of this group to disregard commonly accepted ethical conduct and to cater to irregulars.

Other criticisms allege excessive claims of special ability of group members and the designation as specialists of those who lack proper qualifications for the title

Untrained practitioners place themselves before public as specialists

Often inexperienced physicians

Does away with individual diagnosis

Each group cannot have best specialists yet they keep patient.

Tendency to overrate individual attainments of group

Men are unqualified for respective specialties Inadequate diagnostic facilities as laboratory

A few cite dissensions within the group as an undesirable feature

'Internal trouble is all I hear of

Internal strife.

Group splits in poor times

Jealousy among members of group

A different type of criticism is directed at the relation of the group to the patients Seven replies charge that the cost to

patients is increased and four that excessive and unnecessary treatments are given. Additional comments along this line follow:

- Does not offer any benefits in service or equipment
- No benefit from family physician's records and knowledge of individual
- No free choice of physician
- Tends to remove close personal contact with patient
- Tending to stress surgery the easiest profit to base diagnosis on laboratory findings rather than careful physical examination and to make 80 per cent of the common run of patients share the expense of the 20 per cent actually needing specialized care

The eleventh question was designed to obtain the opinion of the secretaries as to the attitude of the public toward and any special advantages of group practice in rendering service to patients. The question reads:

'Has group practice proved to be more satisfactory to the patients who have used it than individual general or special practice?' This was to be answered by 'Yes' or 'No' and was followed by the question, 'In what respect is group practice of greater benefit to the patient?'

There were 147 replies to this question. Of these fifty-three said 'Yes,' and the comments of eleven others indicated an affirmative answer—a total of sixty-four. There were forty-one who said 'No' and nine others whose comments indicated that they did not consider group practice more satisfactory to the patient than individual practice—a total of fifty. Thirty-three who replied were unable to express a definite opinion giving such answers as 'Do not know,' 'Cannot tell' and 'Opinions differ.'

The answers to the second half of the question 'In what respect is group practice of greater benefit to the patient?' in some ways duplicated replies to some of the previous questions but from a somewhat different angle. Fourteen said 'better' or 'quicker' or 'more thorough service' at 'reduced' or 'no additional cost.' Ten stressed the opportunity and convenience of consultation.

Other replies were:

- Greater facility in handling specialties
- Patient will be treated by specialist much earlier
- Specialties are more successful and charges are not so great
- The patient has the benefit of several opinions in diagnosis and is not so apt to be exploited in surgical procedure
- Patient benefits from more accurate diagnosis and general access to varied and costly equipment—men are better up on their specialties since they limit the field of their activities and have enough work to justify it.
- Patients better able to meet bills
- The individual doctor has more equipment with which to work and time is saved for him in consultation and laboratory work
- For the difficult case group practice is the best because all special examinations can be conducted within the group
- He can have everything necessary done at one place and with the least loss of time. Usually total cost is less
- It gives the patient the benefit of the combined physical and mental resources of the clinic at a reduced cost

The final question reverses the attitude of the previous one and asks 'If you believe group practice does not offer any special benefits to the patients state your reason therefor.'

Fifty-one secretaries expressed an opinion on this question. Many of these replies were largely a repetition and emphasis of opinions given in reply to previous questions. Twenty insisted that cost of treatment was not reduced that it was generally increased and that in many cases this was due to excessive practice. Some of these comments follow:

- Does not reduce costs and I don't believe they do any better work.
- Increased costs due to favoring the cases
- Too expensive as a rule and too much red tape. Why run every patient through a routine when not necessary?
- Probably on the whole a better physical examination than by any other method, but usually includes much unnecessary routine examination and tests which run up costs to patient.
- Ordinary type of office patient who comes for minor ailments may be inconvenienced by the delay that seems to be necessary in handling patients in a group. This type of patient could probably be cared for in a more rapid and just as satisfactory manner by the individual practitioner
- Based on statements of patients themselves the chief objection is the cost. There is always the tendency to add successive charges and costs which are not added when the individual is used
- The expense to the patient would probably be increased because of increased overhead
- Some patients complain of cost and time taken over trivial things and the general character of the service rendered
- Instead of lessening the cost per patient it is my opinion that it tends to increase it because of the possibility of greater financial returns by consulting with the many different members of the group

It increases the medical cost two or three times usually with no better results. This has been the experience with this sort of practice in our community.

Costs are greater—more unnecessary work and laboratory examination. The individual physician will put in time and effort on the patient and ask consultation if desirable but does not call in two or three others on all cases and make unnecessary x-ray and other examinations for which the patient has to pay in the group.

Has not reduced general costs to patients. Referring of patients for consultations within one or the other group as much as possible is not always of advantage to the patient.

The group fees in this city are no less than those of individuals and consultants combined.

Increases cost of medicine. Just another form of unfair competition.

The remaining criticisms are so diverse in their character as to be difficult of classification. Taken individually they give so complete a picture of the attitude of members of the profession on this important point as to justify the quotations given.

Groups so organized are for the benefit of the doctors and not of the public.

Members do not stick to specialty. All doctors in general practice. Professional interest dissipated somewhat on account of division of responsibility.

The groups are banded together for their own benefit and try to keep all work in their own hands whether it is to the benefit of the patient or not.

Examinations by a number of physicians is rarely cheaper in a group than by individuals. The relation of the family doctor to the patient must not be lost.

Several such groups broken up after year or two. Economic distress was cause of formation.

Often some jealousy among the groups as to ownership of the patient. Feel that patients can get as adequate attention from their doctor as from groups.

It all depends on group which is no better than its weakest sister. Nepotism enters into most groups. Often merely a feeder to head surgeon.

Each group cannot have best specialists so as they keep the patient he cannot receive the best attention. Most groups have one or two outstanding men who depend on youngsters for diagnosis—not giving patient what he is paying for. Benefit of complete examination for some is offset by unnecessary amount of something done for others.

Group practice is made up of ordinary physicians who have made no special preparation for their specialty. Many unnecessarily referred. Much time lost to patients and many physiologically ruined.

If the individual physician would give the necessary time and care to the patient the benefits to the patient would equal those of group practice. The individual physician should be more valuable as he should have a greater interest in the patient.

I am convinced that group practice would offer special benefits to the patients locally provided the proper group were assembled. The group undoubtedly offer more distinct benefits. The clinic is not balanced and the clinic is too expensive for the value of the work given.

Personally I see no benefit from group practice especially in country districts. It may be an advantage in large centers of population when as usual it is in connection with large general hospitals.

A clearly defined feature of the replies is that they are contradictory on almost every point. A possible explanation is that they do not refer to the same thing. It has been customary to discuss group practice as if it were a standardized uniform type. This may be due in part to the tendency to focus attention on the material equipment forms of organization and number of members without considering the variable human element and the personal relations within the group and with the patients and the profession which after all are the basic facts in all medical practice.

When one considers this one begins to see that medical groups vary as widely in this most important feature as the individuals who compose them and the people with whom they come in contact. Then it is possible to understand why one group is praised and another condemned.

Any form of medical practice exists for the purpose of giving a personal medical service to patients, and the vital questions concerning it are not its internal business arrangements the methods of distributing income among its members or even the size of its equipment or the amount of capital invested. All these are secondary to the knowledge skill tact integrity and other 'personal capital' possessed by the individual physicians and all forms of medical practice must be judged by this standard rather than by standards borrowed from the fields of industry and commerce.

Applying these standards as far as possible to the facts just presented it is possible to draw some conclusions. It would seem to be quite clear that the individual physicians controlling the groups have not generally succeeded in reducing the costs of medical care. They have increased it in some cases, reduced it in others and given better service for the same money some-

times and unnecessary service at other times, just as individual practitioners have done. There is nothing inherent in group practice that requires any of these policies.

When a similar standard is applied to the question of the relative attractiveness to the individual physician of group versus individual practice, one again obtains contradictory answers. If the objective is financial success, achievement depends on the individuals and the methods used. The same conclusion follows concerning those groups motivated by scientific enthusiasm, desire for more thorough service or any of the other objectives listed.

Common possession of superior equipment or facilities for consultation does not insure better diagnosis or service unless these facilities are in the hands of persons with the purpose and ability to use them for the benefit of the patient. Without this purpose and ability, elaborate equipment and multiplicity of alleged specialists result only in unnecessary duplication of work and expense to the patient.

Another set of judgments seems to depend more on whether the association of several individuals in itself creates new conditions. Sociologists have long recognized that the group tends to exhibit in an exaggerated form many of the characteristics of the individuals who compose it. A sort of "group patriotism" is developed which, unless vigilantly restricted, creates mutual hostility between the group and all outsiders. That some groups have failed to control this tendency is plainly shown by the replies indicating friction within local medical associations.

Ethical problems are always concerned with relations between individuals or groups of individuals. New ethical problems develop with each new form of association. It is, therefore, inevitable that medical groups will create such problems. This does not imply that the principles of medical ethics are changed, but only that new relations create new strains and stresses within the ethical structure.

The larger the "overhead" and the resulting "fixed charges" in any business, the greater is the pressure for expansion of the market. The pressure on a medical group with expensive equipment to seek new business in unethical ways is therefore inherently greater than on the individual practitioner. The presence of a "business manager," less sensitive to medical traditions, and compelled to justify his existence by financial standards introduces another disturbing element. The very numerical bulk of the group and its possibly conspicuous equipment tempt it to adopt forms of publicity not used in individual practice.

It should be clear that there is no inherent good or evil in business managers, equipment or the grouping of numerous physicians. These features are but instruments and the ethical questions involved concern their use by the individuals constituting the group. Ethical questions, like medical service, are personal and individual. There are no different, or additional, standards of conduct for individuals in a group from those for individuals working alone, although many lay discussions seem to assume the contrary. Advertising solicitation, excessive practice restriction or choice of physician are no different and no less reprehensible when practiced through a third person by a number of physicians in a group than by an individual practitioner.

(To be continued)

**Rest and Pain.**—About the middle of last century a very philosophically minded surgeon, James Hilton wrote a remarkable book, now too much neglected entitled *Rest and Pain*. He pointed out that rest was nature's method of cure for many ailments and that pain was a method of securing rest. One might almost modify a well known phrase and say "While there is pain there is hope." Not infrequently, when the vital forces are giving up a hopeless conflict pain ceases. Unfortunately, although pain is nature's danger signal and imperative demand for rest, it is not perfectly adapted to its end. Here let me put forward what I believe to be an important law of life: the response to an abnormal stimulus is never so perfectly adapted as the response to a normal one, if it were in the course of evolution the abnormal response would replace the normal one.—Brown W. L. *Rheumatism and Arthritis as a Public Health Problem*, *J State Med* 61:249 (May) 1933.

## Association News

### THE MILWAUKEE SESSION

#### Railroad Rates

The Southeastern Passenger Association, in addition to the other passenger associations previously mentioned, has announced that tickets will be sold from its territory to the annual session of the American Medical Association at one and one third fares in accordance with the regulations set down under the heading "Transportation" in the May 13 issue of *THE JOURNAL*.

The round trip rate of one and one half fares previously announced by the New England Passenger Association has been reduced to a fare and one-third for the round trip.

#### Section Dinner

The Section on Gastro-Enterology and Proctology has arranged to have its dinner at the Hotel Schroeder on Wednesday evening, June 14, at about 7 o'clock. Dr. H. L. Bockus, 250 South Eighteenth Street, Philadelphia, is the secretary of the Section on Gastro-Enterology and Proctology.

#### Section Reunion Meeting and Smoker

The officers of the Section on Ophthalmology have arranged for an informal reunion meeting and smoker Wednesday evening, June 14, at about 7:30, in the Skyroom of the Plankinton Hotel. The secretary of this Section is Dr. Parker Heath, 1551 Woodward Avenue, Detroit.

### ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

*Twenty-Ninth Annual Meeting held in Chicago Feb. 13 and 14, 1933*

(Concluded from page 1437)

DR. T. J. CROWE, Dallas, Texas, in the Chair

### THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

FEBRUARY 14—AFTERNOON

#### Regulation of the Practice of Pharmacy

H. C. CHRISTENSEN, Ph.G., Chicago. Pharmacy has much the same trouble as medicine and the rest of the professions—that is, an oversupply. We discuss regulation along the same lines that you have today, and we find the same obstacles. We have made progress in pharmacy. Some physicians who see the ordinary drug store from the outside probably are not impressed with its professional appearance. After all, the educational requirements of pharmacy have been advanced until it is nearly on a par with the other professions. Thirty-eight states are now on a college graduation requirement, which means a four year course in addition to high school. We have not yet gone onto what might be called an equivalent of your premedical requirements.

In pharmacy the work of reciprocal interchange was delegated to the individual boards from 1904 to 1914, without supervision by a national office, but this plan was not satisfactory. Therefore, in 1914 a central office was established in Chicago which acts as a clearing house for reciprocal licensure. Each applicant submits a statement of his qualifications to that office on proper forms. If he is found to be eligible in the particular state in which he desires registration, an official application blank is issued to him, for which there is a fee. No member board recognizes a reciprocal application unless it is made on this official form. Thus we have had a uniform application blank for many years.

We have, I believe, greater variation in our standards for entrance to board examination than you have in medicine. Approximately forty states require college graduation at present, but in some of these exemptions still remain open. From the standpoint of the boards, the central office has increased the efficiency in handling these applications. The boards have the final decision as to acceptance or rejection of the application, but the percentage of rejections is very small.

Our association's income from dues is \$25 for each active member board, providing a budget slightly in excess of \$1,200.

per annum at present, which would not support a central office. The fairest method of meeting the association's expense, it seemed to us, was by a fee, payable by the applicant at the time of issuing the official application. Thus the actual cost of maintaining reciprocity devolves chiefly on those who receive the benefits of a reciprocal license. In the pharmacy examinations we adopted a uniform grade standard years ago—a general average of 75 per cent with not less than 60 per cent in any one subject. Some of the boards that were slow in affiliating with the association did not adopt this standard until some years later, with the result that some of their earlier registrants who were licensed with a minimum grade of 50 or 55 per cent or perhaps a general average of 70 per cent are now ineligible in some states that are holding strictly to the uniform standard. The question of reciprocity resolves itself into trusting an examiner in another state having faith in his integrity, he cannot translate his rating into absolute or arbitrary numbers—it is either a case of deeming the applicant worthy of a license and passing him, or else deeming him incompetent and denying him a license. Therefore, I am hoping that we shall soon be able to accept your liberal attitude on this question of grades by completely eliminating consideration of them in reciprocal registration.

In our system of reciprocity, any state board that affiliates with the National Association of Boards of Pharmacy agrees to give examinations at least equal to the minimum standard examination recommended by the association. The requirements specify the subjects of examination, the number of questions in each subject, and the number of subdivisions. We have forty-nine member boards interchanging licenses and recognizing one another's examinations. In this respect pharmacy has accomplished a national system of reciprocity. The pioneer work was done from 1904 to 1914. After about ten years of reading examination questions at conventions and arguing about them finally when our examination committee prepared an outline for the minimum standard examination we were ready to accept it. We had to guard against infringement of states' rights. But we were not satisfied with the old harsh rule of "equivalent state standards" which worked so many injustices. We finally worked out what we call our basic rule for reciprocity," which places the basis for reciprocity on the personal qualifications of the applicant at the time of examination instead of making the requirements of the state law the basis; namely, that the applicant is eligible reciprocally in those states in which he was eligible to sit in examination on the date of his original registration. That word *original* is important—it exempts him from any increase in requirements after his examination date. Pharmacy was the first profession to work out this personal qualification basis for reciprocity. In some states it was difficult to get the legal authorities to see the justice of accepting such an interpretation of the law and sometimes we had to amend the reciprocal clause to get the interpretation accepted.

The National Association of Boards of Pharmacy was organized for the purpose of working out a system of national reciprocity. We feel that we have accomplished a great deal. By agreeing on a national goal or standard in the form of a recommendation at our annual meetings, we have had something definite to suggest when the individual states were considering changes in their pharmacy laws. A model law was compiled; uniformity, however, is desired only in essentials. No attempt is made to enact this draft, word for word.

The most important problem confronting the public health professions today is the growing tendency toward consolidating these boards into departments of licensing, registration, and so on with the responsibility and power placed in the hands of a political director. Such consolidation has already been accomplished in five states (including Illinois) and I am informed that ten states are at present threatened with attempts to enact such legislation. The plea is of course, saving money for the taxpayers. The politicians who sponsor such measures overlook the fact that the professional boards are self-supporting. Taxpayers have never been called on for funds to support these boards; all the expense being borne by the members of the profession. Therefore the motive back of such measures is undoubtedly the realization that dwindling taxes will soon necessitate abolishment of many bureaus and

jobs; thus new offices must be created this time at the expense of the professions and the public welfare. A study of the existing consolidation departments shows that they are relatively inefficient and expensive. The economy argument is a myth, once the department is established. In one state such a department was started on a budget of \$100,000 a year (a very slight saving from the cost of operating individual boards). Twelve years later, this budget had been increased to \$300,000. A perusal of the reports of such departments finds little if any mention of law enforcement. Most of the budget is spent in licensing activities, whereas the purpose in issuing licenses is merely to have a record to aid in law enforcement. The professional boards can do little, once such a department has been established. Their powers are limited to conducting examinations and grading papers.

When the original state laws governing the practice of medicine, dentistry, pharmacy and other public health professions were enacted great care was taken to keep the professions out of politics. That safeguard is needed today more than ever. It is our duty now to fight for the right to continue to police our own professions without political interference. The public welfare demands it. Medicine alone cannot win the fight nor can pharmacy or dentistry or any other of the professions. If, however, when such measures are proposed in a given state the professions within that state will present a united front and inform not only the legislature but also the public as to the true facts in the case, we shall be successful in retaining our right to continue free from political interference.

#### Interstate Endorsement of Medical Licensure

DR J. N. BAKER, Montgomery, Ala. One of the most important obligations of licensure boards at present is that of investigating and rating the professional and moral integrity of candidates. More thought should be given to tests of character in the applicants who come before it. Similar tests should be encouraged for those who apply for admission to schools of medicine. These tests should include evidence of the applicant's attitude of mind toward work and his due regard for obligations and duties which have been assumed by him or imposed on him. It is believed that many brilliant minds as they progress through the elementary schools, acquire habits of indolence because their tasks, having been designed for the average child, are too easy to command their interest. Not only habits of indolence but a disrespect for educational ideals and school policies are sometimes engendered in the upper 25 per cent of the pupils because of this maladjustment. Medical schools are making a definite bid for entrance students from this group of the higher intelligence levels. All along the line, insufficient emphasis is being placed on the fact that no man can hope to adorn the practice of medicine or succeed in fulfilling his obligations to society if he fails to value and glorify his work as well as to be dignified by it. In the interest of humanity our boards of medical examination and licensure should not only undertake to test the work habits of candidates who come before them but ascend a little farther upstream in the educational field and endeavor to promote in our grade schools the safeguarding of brilliant children from the disintegration of character that results from a lack of sufficient exercise for the full quota of one's mental faculties.

Reciprocity is an existing mutual agreement between the states in question. The merits of each candidate are given individual consideration. In Alabama, few reciprocity certificates were granted prior to 1917. I use the term advisedly here because under the present arrangement, the attorney general of this state has ruled that there must exist a written reciprocal agreement with the state from which a candidate applies before a pro forma certificate can be issued. However, in Alabama trading and politics at least up to now have played no part in this method of licensure. Granted the existence of reciprocity relations, physicians are licensed on the basis of their qualifications. The experience of the federation suggests the early adoption of practical uniform medical practice acts, the education of the public to an appreciation of scientific medicine, the utilization of active cooperation from the reputable medical profession and the removal of sectional barriers against reciprocal licensure of adequately qualified

physicians regardless of the name or geographic location of the states from which they apply

One of the present barriers to uniform practice in medical licensure is found in those states which have enacted 'basic science' laws seeking to control and eliminate cult and irregular practice. Such acts require that every candidate who comes before the medical board for examination shall be given a test in the 'basic sciences' regardless of the method by which he proposes to practice the healing art. The thought behind such laws is to establish a base line of minimum requirements for all who aspire to practice the healing art, regardless of the method of treatment employed. Alabama has but one yardstick for all who assay to treat diseases of human beings, into which unit of measurement no therapy is incorporated. The application of this yardstick is vested, by law, but fairly and impartially, in a board of medical examiners, composed exclusively of regular medical practitioners, the only qualifying condition being that in the case of any applicant not of the regular school, the educational qualifications are waived. In Alabama, as in other states, many attempts have been made by the various cults to batter down these high standards, but so far without success. It safeguards the legal interest of citizens and answers effectively the charge of selfish motives put forth in cult propaganda against practitioners of scientific medicine. The disadvantages of basic science laws are easily discernible in that it complicates licensure and exacts a superfluous and unwarranted amount of work in examining candidates who have been graduated from grade A medical schools.

Owing to certain complications inevitably growing out of such a 'basic science' law, the federation has not seen fit to give it unqualified endorsement yet, in some of the states basic science legislation has aided in controlling the wholesale issuance of cult license by independent or political boards.

Should candidates who have failed before a medical board be subsequently licensed by reciprocity? Alabama has been the subject of some comment on this score in that it does not grant a pro forma certificate to any physician who has once failed before its own medical board of licensure. It has been a continuing belief of the Alabama board that the standards for reciprocity should be even higher than those for examination. With this thought in mind it is felt that this rule should receive wider observance and should certainly not be abrogated at this time by any state board.

#### DISCUSSION

DR ROY B. HARRISON, New Orleans, Louisiana has a straight medical board, and our reciprocity deals entirely with physicians. Our law requires that one has to be a graduate of a class A medical school graded by the American Medical Association to practice one year subsequent to licensure, and to have at least ten major subjects with an average of 75 per cent in each one. Each application for a license by reciprocity is handled as an individual case. We have some applications on file for three months before they are passed on. We found through experience that many men will move to another state for other reasons than change of climate. We find there is quite a bit behind their transferring from one state to another. We have a temporary permit to a reciprocity applicant, which gives plenty of time to investigate before we finally act on his application. We investigate him through the American Medical Association and through the place he last resided and through the place where he contemplates practicing. We require that each individual be an American citizen before we give him a license by reciprocity or by examination. We do not even consider any foreign application for reciprocity. We examine all, and we look up their credentials and so forth in Europe or wherever they come from. The Louisiana board is, I think, a bit different from some boards in that we have a straight out and out medical board and we have a few cults as any state in the United States. We have no chiropractors and the other cults are in the minority. The osteopaths have their own board. They are not allowed to use drugs in any form. I think there are only twenty-five in the state of Louisiana. The chiropodists and the opticians have a limited license. One of the principal objections to standardizing reciprocity is that one state will have a medical practice act that is more severe than that of another state. Ours has been severe, and we are going to keep it severe as long as we can.

We are going to keep it a straight medical board and prosecute all cults as they come up.

DR H. M. PLATTER, Columbus, Ohio. Ohio will accept through reciprocity, a man licensed in another state who meets the Ohio requirements for entrance to the examination at the date of his graduation and is from a school that would permit him to write the Ohio examination. There is no reason why there should be a varying standard of requirement in the several states, of men who are graduates of a class A medical school. A committee of this federation, meeting with a committee from the Association of American Medical Colleges, might work out a working agreement which could be applied to every state in the Union. It is our practice to send out about twelve letters on every applicant for reciprocity. They go to the county medical society, to physicians who are Fellows of the American Medical Association who are known to us either personally or by reputation, to the American Medical Association and frequently to some man of prominence in the town from which the man is coming.

DR C. H. EWING, Larned, Kan. I sometimes wonder whether we do not take ourselves too seriously in the matter of qualification of members in reciprocity. I see in THE JOURNAL a list of the failures from various schools and I wonder if we are qualified to pass on the ability of the students from these schools better than the heads of our universities. I sometimes wonder whether there is not something wrong with the medical board instead of the university or the students. Reciprocity is more or less of a joke in some states. In our state we have a medical board. The chiropractors have a board of their own. The osteopaths have a board. We have nothing to do with them at all. We do not permit a student to take our examination unless he is the graduate of a class A medical school. The heads of our universities know when these students are qualified to practice medicine and we rely on their judgment. For that reason we do not have any failures.

DR H. J. LEHNHOFF, Lincoln, Neb. A man seeking licensure in Nebraska by reciprocity does not have to take an examination before the basic science board. They have the privilege of passing him without an examination and in most cases do. There are difficulties with the basic science boards. I think their requirements are too high. Several years ago this federation advised the basic science boards to come to a better agreement among themselves, which I think was good advice. I do not think they should require a grade of 75 for passing when practically all of the medical boards require only 60. The board of Nebraska and the physicians in general do not want to bar students from other states. I think it is the feeling of all of us that we want a freer reciprocity. There are a lot of little things in reciprocity and licensure that we could agree on. We surely can agree on the age of the individual who is applying for licensure. We ought to agree on his citizenship but we do not. Some states require full citizenship, some of them require the filing of the first papers or the second papers. If we went at this carefully, we could get together on reciprocity and all be very much happier.

DR O. G. COSTA-MANDRY, San Juan, Puerto Rico. If I am not mistaken the Alabama board does not recognize reciprocity to any individual who has failed in an examination in the state from which he came. Am I correct?

DR J. N. BAKER, Montgomery, Ala. No. We have had instances wherein a man would fail before our board, go into an adjoining state and pass that examination and come back and want reciprocity. We do not give reciprocity in those cases.

DR COSTA-MANDRY. I do not think that an examination is always a fair means of judging the ability of an individual. If an individual makes a good showing in practically every subject and flunks in one subject, one has to consider a lot of factors that one would not otherwise consider. In our board we have a special ruling for grading examination papers. We divide the subjects into two groups. Our passing mark is 75 per cent. We allow an individual to fail on one examination in each group of subjects, and if he makes an average of 75 per cent we pass him, but if he does not make the average of 75 per cent, he has the right to solicit the representation of all his papers to see whether a mistake was made in grading them. I am more inclined to think that one should consider

the cases individually on the merits of each case rather than to make a hard and fast rule and say that, if an individual fails to pass the examination in a certain board because he has failed on one subject, he should be barred or denied the privilege of reciprocity, especially if that individual has been in practice and has made good. We have reciprocity with the state of New York, and we have a special agreement with the state of Pennsylvania by which we give men who are licensed in Pennsylvania the same privileges that Pennsylvania gives men licensed in Puerto Rico. Pennsylvania makes a special case of every individual, that is to say, it is not obliged to give reciprocity to any of our men just because they solicit it but it studies the case and if it thinks the individual deserves it, it extends that courtesy. We do the same thing. With New York State we have a reciprocal agreement by which it extends reciprocity to all the men who hold licenses of the state of Puerto Rico. If an individual graduated at a time when the requirements were less than at present, New York and Puerto Rico consider five years of practice in the state an equivalent to the requirements which that individual has not met. That is why I think the boards should make an individual case of every one that applies for a license, as they do in Louisiana, because in that way one gives a fairer chance to any one who comes up for licensing.

DR J N BAKER, Montgomery Ala. Recently I checked up on the men who had appeared before our board for the last ten or eleven years. We have not rejected a single man in the last ten years who was a graduate of a grade A medical school which is a requirement of our board so far as examination is concerned. I have the feeling that after a young man has spent so much of his life in equipping himself at a grade A medical school, with one or two years of hospital training, it is not fair for an examining board to make him go over the elementary grounds again. Our licensing boards have served a most valuable purpose. When we had diploma mills we had to protect both the recognized medical profession and the public at large, but now I think we have set up a machine that we can rely on. Reciprocity should be carefully considered by every licensing board. So far as admitting a man to my state is concerned, if he shows good technical training I would rather spend several months investigating his character and moral fiber before he comes into Alabama. I think that is one of the most valuable points to be borne in mind by licensing boards.

DR CROWE. If you will all commence an index of men who have been convicted of crime and whose licenses have been revoked in other states, taking newspaper clippings and the *Federation Bulletin* showing the convictions in the various states, you will be surprised how large a list you will have of men who will approach you for a license, whose licenses were revoked in some other state or who have been convicted of a crime of some kind. I suggest that that method be pursued, and also that you resort to the files of the biographic department of the American Medical Association for further information on every applicant who comes to you for reciprocal endorsement. In Texas we cut the word "reciprocity" out of our statute. We do not reciprocate, and yet we receive men from every state in the Union, regardless of what the other states will do for our licentiates. We take the man on his merits and on his qualifications.

## MEDICAL BROADCAST FOR THE WEEK

### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9 15 to 9 20 a m Chicago daylight saving time which is one hour faster than central standard time, over Station WBBM (770 kilocycles or 389.4 meters)

The subjects for the week are as follows

May 23 Vacations and Typhoid  
May 25 Hitch Hikers

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

May 27 Swimming Hazards

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC)

### ARKANSAS

**Personal**—Dr John R Kitley has been reelected mayor of Mayflower—Dr Frank C Maguire, Augusta, was recently appointed coroner of Woodruff County—Dr Charles A Arkebauer, Little Rock, who has been associated with the State Hospital for Nervous Diseases for thirty-two years, has been elected chief of the medical staff, a position recently created to replace that of superintendent—Dr George A Hays, Pine Bluff has resigned as director of the city and Jefferson County health departments after four years' service

**Society News**—The Sebastian (Ark) and Muskogee County (Okla) medical societies were addressed at a joint meeting, recently, by Drs Joel T Woodburn on childhood tuberculosis, James F Campbell, epidemiology of ringworm, John H White diagnosis and treatment of goiter, and Charles E. White, use of calcium in pregnancy. All the speakers were from Muskogee, Okla.—A recent meeting of the Union County Medical Society was addressed by Drs John A Moore and Arley D Cathey, El Dorado, on influenza with complications and ectopic pregnancy, respectively—Drs Francis T H'Doubler and Elmer G Wakefield, Springfield, Mo, gave a joint paper on "Preoperative and Postoperative Care of Pyloric Obstruction" before the Washington County Medical Society, recently

### CALIFORNIA

**Society News**—At a meeting of the San Francisco County Medical Society, May 9, Drs Robert C Coffey, Portland, Ore, spoke on Quarantine Principle as Applied to the Treatment of Disease and Sadie D Patek, A Study of the Results of Specific Treatment of Syphilitic Pregnant Women and Their Offspring—A preview of the installations of habitat groups of African mammals in its museum was a feature of the celebration of the eightieth anniversary of the founding of the California Academy of Sciences in San Francisco, April 4. When completed, these installations will include ten large groups, thirteen intermediate small size groups and one very large waterhole group. All will be artificially illuminated—A Greek program was presented by the California Medical History Seminar at the Bohemian Club in San Francisco April 21. Dr Pan S Codellas discussed the work of Adamantios Koraes (1748-1833)

**Bills Enacted**—The following bills have become laws. A 317, amending the state narcotic drug act, by (1) requiring practitioners to preserve for not less than two years records of narcotic drugs prescribed, administered or dispensed, (2) providing that proof of the possession by the defendant of a greater amount of narcotic drugs than is accounted for by his records shall be prima facie evidence of guilt (3) forbidding the possession of a false or fictitious prescription or one that has been altered by any person other than the prescriber and (4) providing for the forfeiture of vehicles used in the unlawful transportation of narcotic drugs. A 318 amending an act to regulate the sale of poisons, approved March 6 1907, by (1) providing that the registration of any registered pharmacist may be revoked on conviction of violating any of the narcotic provisions of the act, (2) making it 'unlawful for any person to open or maintain, to be resorted to by other persons, any place where opium or hemp or loco weed is sold or given away to be smoked on the premises,' and for any person to resort to such a place, (3) making it legal for registered nurses to acquire and possess without written orders from licensed physicians, hypodermic syringes and needles, (4) defining "physician" to include licensed osteopaths, (5) prescribing a procedure for forfeiting vehicles used in the unlawful transportation of narcotic drugs, and (6) permitting physicians in good faith to prescribe or furnish narcotic drugs to patients suffering with incurable diseases, ailments or injuries, other than narcotic addiction, and requiring physicians prescribing or furnishing narcotics to habitual users to report that fact by registered mail to the division of narcotic enforcement

### COLORADO

**Bill Passed**—H 734 has passed the house, proposing to create a state board of osteopathic examiners to exercise all the rights and powers and perform all the duties now vested by law in the state board of medical examiners with respect to the practice of the healing arts by osteopaths

## CONNECTICUT

**Bill Enacted**—H 570 has been enacted as chapter 139, Laws of 1933 amending the medical practice act by (1) providing that all applicants for licenses, whether by examination or by reciprocity, shall be citizens of the United States or shall have on file written declarations of intention to become citizens, (2) raising from \$15 to \$50 the fee required for issuing licenses by reciprocity (3) exempting from examinations holders of certificates from the National Board of Medical Examiners, although they have not been in active practice for three years and (4) providing that persons, graduates from medical colleges prior to Jan. 1, 1919, and persons eligible for examination before that date shall not be required to have a one year college course in chemistry, physics and general biology, as is required of all other applicants

## FLORIDA

**Bills Introduced**—S 212 proposes to authorize the state board of health to license persons to practice midwifery, and to promulgate such rules and regulations as it may deem necessary for regulating the practice of midwifery S 373 and H 686 propose to require the annual registration of pharmacists with the state board of health, and to authorize the state board of health to appoint one or more registered pharmacists to act as inspectors to aid it in enforcing the pharmacy practice act. H 685, to amend the pharmacy practice act, proposes to raise the annual registration fee required of registered pharmacists from \$1 to \$5 H 769 proposes that all members of the state boards of medical examiners osteopathic examiners, chiropractic examiners and naturopathic examiners shall receive \$25 for each day they are actually engaged in the discharge of their official duties and 3 cents for each mile necessarily traveled in going to and from meetings of their boards H 774 proposes to permit all licensed practitioners of the healing art to practice within the confines of all hospitals maintained wholly or partly by public funds and to treat their patients therein in accordance with the method of their several schools of healing H 771 proposes to require physicians, osteopaths chiropractors and naturopaths to pay an annual license fee of \$5 to the boards which licensed them Ten per cent of the fees so collected is to be remitted to the state treasurer and the remainder is to be retained by the several boards H 768 proposes that a person required by statute to be examined and to have a certificate showing the state of his health may be examined by and obtain such a certificate from any practitioner of the healing art H 773 proposes to authorize the boards of medical examiners osteopathic examiners, chiropractic examiners and naturopathic examiners to grant licenses without examinations to licentiatees of like boards of other states whose requirements are equal to the requirements of Florida H 772 proposes to require all applicants for licenses to marry to present certificates from licensed practitioners of the healing art that both parties to the proposed marriages are in good physical condition and are free from communicable diseases H 770 proposes to require the governor to appoint one doctor of medicine, one osteopath, one chiropractor and one naturopath to serve on the board of governors or board of trustees of every hospital and other institution maintained wholly or partly by the state funds

## ILLINOIS

**Bills Introduced**—H 784 and 785 propose to create a board of chiropractic examiners and to regulate the practice of chiropractic. Chiropractic is defined to be the science of palpating and adjusting the articulations of the human spinal column without the use of drugs or surgery Applicants for such a license must be high school graduates and have graduated from schools of chiropractic approved by the department of registration and education, after completing courses for three school years of not less than six months' duration each However, persons who on the 31st of December, 1933, are students in schools of chiropractic may be licensed even though they do not have high school educations and their chiropractic schools are not approved by the department H 808 proposes extensive amendments to the Illinois dental practice act It exempts from the operation of the act 'the rendering of dental relief in emergency cases in the practice of his profession by a physician or surgeon, licensed as such and registered under the laws of this state, unless he undertakes to reproduce or reproduces lost parts of the human teeth in the mouth or to restore or replace in the human mouth lost or missing teeth' H 842 and H 843 propose to create a board of examiners for 'the medical practitioners who practice osteopathy' and to regulate the practice of osteopathy The board is to be authorized to issue two kinds of licenses (1) licenses to practice osteopathy in all its branches (according to the teaching of the osteopathic

school of practice) and (2) licenses to practice osteopathy in all its branches, except major surgery The holders of both kinds of licenses are to be permitted to make and sign birth and death certificates and to practice in hospitals supported in whole or in part by public taxation

## Chicago

**Miller Finally Pays His Fine**—With the payment of a \$2,000 fine to the clerk of the criminal court April 24 the case of William Henry Harrison Miller, former director of the state department of registration and education as related to diploma mill activities apparently was brought to a close Miller's first flagrant violation of the law was disclosed in April, 1922 when the Cook County grand jury charged him and three others with trafficking in state licenses to practice in various professions He had been appointed director of the state department in January, 1921 It was revealed during the investigations that the questions to the state board examinations were being sold to prospective applicants Following an investigation by the state's attorney and a committee appointed by the governor, Miller was indicted by the grand jury for conspiracy and was found guilty Jan. 28, 1923 He paid a fine of \$1,000 in open court, Jan. 30, 1923 Miller's dismissal by Governor Small had occurred in August 1922 following his refusal to resign after the medical board had recommended his removal A M Shelton, Crystal Lake, succeeded him as director Hearings were begun April 13, 1923 to revoke all licenses illegally issued under Miller's administration In the interim however several states had suspended reciprocal relations with Illinois on account of the investigation but these were restored following the board's reorganization in the latter part of 1922 Again on Dec. 10, 1929 Miller was found guilty of conspiracy to sell medical and dental licenses to persons not qualified to practice This trial was the result of an investigation carried on by a new administration into the charges of illegal traffic in licenses The chief state witness was the late Dr. Robert Adcox St. Louis who was involved in the Missouri diploma mill expose in 1923 He, it was claimed, conspired with Miller in 1928 These new charges were preferred against Miller following his indictment with several others on the charge of operating a 'ring' to sell medical and dental licenses This ring had in its possession special license plates During the investigation an attempt was made to lose these plates in the drainage canal Two forged seals were recovered by divers from Lake Michigan near the Navy Pier The sentence imposed in this instance was seven months and one day in jail and a maximum fine of \$2,000 Miller was denied a new trial Jan. 5, 1930 but he was at liberty without bond until Jan. 22, 1932 when he was arrested in Champaign He had failed to post a bond for his appeal and officials neglected to commit him to jail pending its schedule Miller served the seven months sentence but was detained in jail on its completion because of failure to pay the \$2,000 fine In his petition for release Miller stated that he was penniless having transferred all his property to his wife in Champaign In a previous hearing however the judge had indicated that the transfer was fraudulent In November, 1932 he was released from the county jail on a \$3,500 bond Under a decision given by the Illinois Supreme Court April 22 Miller was ordered to pay the \$2,000 fine or serve an indefinite time in the county jail He paid the fine

## IOWA

**Lectures on the Heart.**—The Dickinson County Medical Society at its meeting February 23, inaugurated a series of monthly lectures on the heart to continue through July Physicians participating in the series and their subjects are as follows

Charles S. Shultz Spirit Lake Anatomy and Physiology of the Heart.  
Clyde C. Nicholson Spirit Lake Acute Pericarditis  
Donald F. Rodawig Spirit Lake Myocardial Disturbances  
Peter C. Grimm Spirit Lake Endocarditis  
Edward J. Johnson Milford Arrhythmias  
Ruth F. Wolcott, Spirit Lake Auricular Fibrillation  
Ferdinand J. Smith Milford Arteriosclerosis and Hypertension  
Cassius M. Coldren Milford Cardiovascular Renal Disease  
Quintus C. Fuller Milford Coronary Thrombosis  
Earl R. Leonard Lake Park Aortic Valvular Lesions  
Alfred H. Schooley Terrell Mitral Valvular Lesions  
William E. Bullock, Lake Park Treatment of Decompensation.  
Ferdinand J. E. Smith Milford Essential Hypertension

## MARYLAND

**Dr. Bard Appointed Professor of Physiology at Johns Hopkins**—Philip Bard, Ph.D. assistant professor of physiology, Harvard University Medical School, has been appointed professor of physiology at Johns Hopkins University School of Medicine effective September 1. This professorship has been vacant since the resignation in 1931 of Dr. William H. Howell

who had held the position since 1893. Dr. Bard was connected with Harvard from 1925 to 1928 and with Princeton University from 1928 to 1931 as assistant professor of biology. In the latter year he rejoined the staff at Harvard as assistant professor of physiology.

**Review Course for Physicians**—The division of medical extension of the University of Maryland will conduct its tenth annual review course for physicians, June 5-23. This will be a single, intensive general course, designed to give to the physician in general practice the opportunity of studying those methods of diagnosis and treatment in current use in the University Clinics. This year the course will be limited to twenty men. A matriculation fee of \$25 will be charged residents of the state, while registrants from out of the state will be charged \$50. The program will consist of lectures, ward rounds, clinics and dispensary clinics. Afternoon periods will be devoted to laboratory methods of diagnosis. Further information may be obtained from the dean of the University of Maryland School of Medicine, Baltimore.

## MASSACHUSETTS

**Dr. Cushing Receives Bigelow Medal**—Dr. Harvey Cushing, until his resignation last year Moseley professor of surgery, Harvard University Medical School, Boston, was presented with the Bigelow Medal by the Boston Surgical Society, May 3. The late Dr. William Sturgis Bigelow, in 1915, gave the society a sum of money with the stipulation that the interest from the funds should from time to time be devoted to the presentation of a medal to one chosen for his 'contributions to the advancement of surgery.' The medal was a memorial to his father, the late Dr. Henry Jacob Bigelow. In the eighteen years since its establishment, the medal has been awarded only six times.

- 1921 Dr. William J. Mayo Rochester, Minn.
- 1922 Dr. William W. Keen Philadelphia
- 1926 Dr. Rudolph Matas, New Orleans
- 1928 Dr. Chevalier Jackson Philadelphia
- 1931 Prof. George Grey Turner Newcastle upon Tyne, England
- 1932 Dr. John M. T. Finney Baltimore

Dr. Cushing presented a paper at this meeting on "Homo Chirurgicus."

**Health Education Meeting**—The eighth annual session of the New England Health Education Association will be held at the Massachusetts Institute of Technology, Boston, June 2-3. Samuel C. Prescott, head of the department of biology and public health of the institute, will give the address of welcome.

**Nutrition and the School Child** will be discussed by Miss Gertrude Spitz, chief of food clinic, Beth Israel Hospital, Boston. **'School Problems in Mental Health'**, James Mace Andrews, Ph.D., Newtonville. **Physical Education and the School Health Program**, Mr. Richard Schmojer, director of health and physical education public schools of Lynn, and **Administration of the School Health Program**, Clair E. Turner, Dr. P.H., professor of biology and public health at the institute. Dr. Haven Emerson, professor of public health administration at Columbia University College of Physicians and Surgeons, New York, will speak on **'Medical Facts and Popular Fallacies as to the Effects of Alcohol on Man'** and Dr. Frankwood E. Williams, New York, **'Youth, the School and the Present-Day World'**.

**State Medical Meeting in Boston, June 5-7**—The one hundred and fifty-second annual meeting of the Massachusetts Medical Society will be held in Boston, June 5-7, with headquarters at the Hotel Statler and under the presidency of Dr. Halbert G. Stetson, Greenfield. Out of state speakers on the program will include the following:

- Dr. Frederick C. Holden, New York, **Pelvic Inflammation: Course and Treatment**—Elliott Heat Apparatus
- Dr. James Burns Amberson, Jr., New York, **Changing Aspect of Tuberculosis Treatment**
- Frank A. Hartman, Ph.D., Buffalo, **Certain Functions of the Adrenal Cortex**
- Dr. William H. Schmidt, Philadelphia, **Fever Therapy and Other Recent Developments in Physical Therapy**
- Dr. Eugene P. Pendergrass, Philadelphia, **Pneumonoconiosis**
- Dr. John J. Moorhead, New York, **Relation of Trauma in Hernia**

Other speakers will include the following physicians:

- Foster S. Kellogg, Boston, **Placenta Praevia**
- Carmi R. Alden, Newton, **Center and Boston Use of Pituitrin in Obstetrics**
- Alton S. Pope, Newton, **Pulmonary Tuberculosis in Adolescence with Special Reference to Frequency, Diagnosis and Prognosis**
- George W. Holmes, Boston, **Conditions in Which the Roentgen Examination May Lead to an Erroneous Diagnosis of Pulmonary Tuberculosis**
- Joseph C. Aub, Boston, **Progress in the Study of Internal Secretions**
- Henry S. Finkel, Boston, **Present Status of Our Knowledge of the Ovarian Hormones**
- Fuller Albright, Boston, **Hyperparathyroidism: Its Diagnosis and Exclusion**
- Tracy J. Putnam, Brookline, **Present Status of Disease of the Hypophysis**

- George L. Stivers, Worcester, **Use of Surgical Diathermy (or Endothermy) in Separating Pleural Adhesions in Cases of Pulmonary Tuberculosis**
- Richard H. Miller, Boston, **Umbilical Hernia**
- Henry C. Marble, Newton and Boston, **Problem of Recurrent Hernias**
- Richard B. Cattell, Boston, **Diseases of the Thyroid Gland in Children**
- Edwin T. Wyman, Boston, **Vitamin D Milk**
- Paul W. Emerson, Boston, **Feeding of Human Milk Preserved by Freezing**
- Cleophas P. Bonin, D.M.D., Boston, **What the Pediatrician Can Do For Dental Cripples**

Dr. Elliott C. Cutler, Moseley professor of surgery, Harvard University Medical School, will deliver the Shattuck Lecture on **The Origins of Thoracic Surgery**. Dr. Channing Frothingham, Boston, will present the annual discourse on **The Trend of Medicine in the Twentieth Century**. Mr. James H. Holland, of the Liberty Mutual Insurance Company, Boston, has been invited to speak on **Hernia from the Compensation Insurance Standpoint**.

## MICHIGAN

**Bills Introduced**—H. 579 to amend the chiroprody practice act, proposes, in effect, to permit licensed chiroprodists to treat ailments of the human leg and foot medically, surgically, mechanically or by physiotherapy. The bill proposes too, to permit such licentates to use the title "Dr." if the word "Chiroprodist" follows their names. S. 204 proposes to permit licensed physicians to prescribe such amounts of intoxicating liquors as they deem necessary to supply the bona fide medical needs of their patients. S. 195 proposes that the law prohibiting employment of males under the age of 18 years and females for a period longer than fifty-four hours in any week or ten hours in any one day shall not apply to the employment of student and graduate nurses in privately owned hospitals.

## MINNESOTA

**Society News**—The Minnesota Hospital Association will hold its annual convention in Minneapolis, May 25-26. Speakers will include Drs. George F. Stephens, superintendent, Winnipeg General Hospital; Winnipeg, Manit.; Bert W. Caldwell, executive secretary, American Hospital Association, Chicago; Malcolm T. MacEachern, director, hospital activities, American College of Surgeons, Charles H. Mayo, Rochester, and Clarence Rufus Rorem, Ph.D., associate for medical services, Julius Rosenwald Fund, Chicago. At a meeting of the Minnesota Academy of Medicine, May 10, Drs. Edwin L. Gardner, Minneapolis, spoke on **Calcium Deficiency Associated with Functional Gastrointestinal Disturbances in Adults**, and Henry E. Michelson, Minneapolis, **Tuberculodermas of the Face**.

## NEW HAMPSHIRE

**Bills Introduced**—S. 34 proposes that the board of medical examiners, the board of examiners of embalmers, board of examiners in chiroprody, board of chiropractic examiners, board of registration in optometry, the state dental board and the commission of pharmacy and practical chemistry be attached to the state board of health for the purposes of general administration. It is to be the duty of the state board of health to provide facilities for the meetings of the boards named and for the custody and care of their records and to exercise such general supervision over their operations as will enable it to satisfy itself that such boards are properly performing all the duties imposed on them by law. S. 37 proposes to make the reasonably permanent insanity of either spouse a cause for divorce.

## NEW YORK

**Personal**—Frank A. Hartman, Ph.D., professor of physiology, University of Buffalo, was recently awarded the Schoellkopf Medal for 1933 in recognition of his work on cortin. The medal is bestowed by the western New York section of the American Chemical Society. Dr. Clara H. Pierce, Syracuse, was elected president of the Women's Medical Society of New York State at the annual meeting in New York, April 3. A painting by Dr. Konrad E. Birkhaug, now an investigator in the Institut Pasteur in Paris, has been accepted for Le Salon de 1933, the annual exhibit of art in Paris, and a series of four large aquarelles for the annual exhibit of students' work made by the Societe Nationale des Beaux-Arts.

**Nassau County Tumor Clinic**—The Nassau County Cancer Committee, a branch of the American Society for the Control of Cancer, has organized a temporary clinic for diagnosis and treatment of tumors at the Nassau County Tuberculosis Sanatorium, Farmingdale. Citizens of Nassau County contributed funds for radium and the board of managers of the proposed new Meadowbrook Hospital made available a high voltage therapy x-ray machine. It is expected that all the clinic facilities will be transferred to Meadowbrook Hospital when it is completed. The committee has organized a

rotating service of attending physicians, with the assistance of the Medical Society of the County of Nassau and the medical boards of the three larger hospitals of the county. This clinic was established, the committee announced, to provide diagnosis and treatment for persons unable to meet the costs of the service through private channels. In addition, roentgen therapy is available for those able to pay, since the clinic is the only place in the county where a tumor patient confined to bed may receive this treatment. It also aims to supply graduate education to the physicians of the county. A charge of \$3 a day is made for all patients, as there is no appropriation to cover the expenses of the clinic. Those who are unable to meet the expense themselves may arrange for care through the welfare authorities. All patients must be referred through private physicians; the county medical society will assist those who have no family physician in selecting one. Patients will be given care only with the advice and consent of the physician who stands in the position of family physician.

### New York City

**Course on Heart Disease**—Columbia University's extension division announces that an intensive four weeks' course on diseases of the heart and circulation will be given at Mount Sinai Hospital, June 5 to July 1. A limited amount of time will be devoted to lectures and an attempt will be made to conduct the course so as to recreate for the student conditions of actual practice. The fee for the course will be \$100. Instructors will be Drs. Murray H. Bass, Ernst P. Boas, Arthur M. Fishberg, Louis Gross, Maurice A. Kugel, Hubert M. Mann, Arthur M. Master, Hermann Mond, Bernard S. Oppenheimer, Irving R. Roth and Marcy L. Sussman.

**The Prevention of Asphyxial Death**—The newly organized Society for the Prevention of Asphyxial Death has called a conference of physicians, hospital executives, health commissioners and insurance and utility company officials of New York state to meet at the New York Academy of Medicine May 24, under the auspices of the academy's committee on public relation. Addresses will be delivered by the following:

- Dr. Shirley W. Wynne, New York City health commissioner, vital statistics relating to asphyxia.
- Dr. Harrison S. Martland, Newark, N. J. medical examiners findings in asphyxial cases.
- Dr. Daniel J. Donovan, chief surgeon, New York City police department first aid and resuscitation methods.
- Albert W. Whitney, associate general manager, National Bureau of Casualty and Surety Underwriters, economic aspects of asphyxial mortality.
- Dr. Chevalier Jackson, Philadelphia, fundamentals of laryngoscopy as applied in resuscitation.
- Landell Henderson, Ph.D., New Haven, Conn., use of oxygen and carbon dioxide in resuscitation.
- Dr. Edmund B. Piper, Philadelphia, practical application of laryngoscopy and gas therapy.
- Dr. Pol N. Coryllos, New York, negative pressure cabinet in treatment of asphyxia.
- Dr. John F. McCrath, New York, ways and means of applying the improved resuscitation principles to medical and hospital practice.

A preliminary report issued by the directors of the society calls attention to the fact that asphyxial death is an important public health problem. More than 50,000 deaths from asphyxia occur in the United States every year, approximately 2,800 in New York City alone. The death rate from this cause in New York is said to be twice that from automobile accidents. The report lists fifteen causes of acute asphyxia and death, including submersion, poisoning from illuminating gas, carbon monoxide and drugs, electrical shock, acute alcoholism, pulmonary diseases, suffocation from strangulation, poliomyelitis and asphyxia of the still-born.

### NORTH DAKOTA

**State Medical Meeting at Valley City, May 31-June 2**—The annual meeting of the North Dakota State Medical Association will be held at Valley City, May 31-June 2, under the presidency of Dr. Paul H. Burton, Fargo. The tentative program includes the following physicians as speakers:

- Frederick C. Rodda, Minneapolis, Intussusception.
- Albert M. Brandt, Bismarck, Diagnosis and Treatment of Primary Uterine Bleeding.
- Leonard W. Larson, Bismarck, Legislative Matters.
- Frank I. Darrow, Fargo, Diabetes Mellitus.
- John D. Carr, Jamestown, Promotion of Preventive Mental Medicine.
- James F. Hanna, Fargo, Treatment of Persistent R. O. P. Position.
- Alano E. Pierce, Minot, Coronary Thrombosis.
- John deJ. Pemberton, Rochester, Minn., Carcinoma of the Rectum and Rectosigmoid.
- Reuben H. Waldschmidt, Bismarck, Treatment of Fractures of the Spine.
- Robert W. Allen, Bismarck, A Plan for Tuberculosis Control in North Dakota.
- John D. Graham, Devils Lake, Rectal Anesthesia in Obstetrics.

Clinics will be conducted by Drs. Pemberton and Rodda, and Melvin S. Henderson, Rochester. The annual dinner will be addressed by Dr. Frank L. Rector, Evanston, Ill., on "Cancer

Control in North Dakota", L. Benshoof, editor the *Detroit Record*, Detroit Lakes, Minn., "Medical Publicity," and Richard E. Scammon, Ph.D., Minneapolis, "Guild Medicine."

### OKLAHOMA

**Bill Enacted**—H. 43 has become a law, prohibiting the possession and distribution of veronal, barbital, luminal, chloral hydrate, bromidia or somnos except on the prescription of a licensed practitioner of medicine, osteopathy, dentistry or veterinary medicine.

### PENNSYLVANIA

**Personal**—Dr. Harry W. Mitchell has resigned as superintendent of Warren State Hospital, Warren, after twenty-one years service. Dr. Mitchell is reported to be critically ill. Dr. Ira A. Darling succeeds him at the hospital.—Dr. Wilhelm L. Scott has recently resigned as resident physician at Rossmore Sanatorium, Lancaster. She was succeeded by Dr. Lloyd S. Hutchison.

### Philadelphia

**Society News**—The thirtieth Mary Scott Newbold Lecture of the College of Physicians of Philadelphia was delivered May 3, by Dr. Ronald T. Grant, University College Hospital Medical School, London, on "Prognosis of Valvular Disease of the Heart." Dr. Grant gave a second lecture on the subject, May 5.—Dr. Norman S. Rothschild, among others, addressed the Philadelphia Academy of Surgery, May 1, on "Repair of Large Incisional Hernia by Flaps of Anterior Sheath of Rectus."—Dr. Abraham M. Ornstein addressed the Philadelphia Medical Examiners' Association May 1, on "Medico-legal Problems."—Drs. Albert C. Buckley and Mitchell P. Warmuth were speakers at a meeting of the Philadelphia Clinical Association, May 2, on "Psychiatric Problems in General Medicine and the Specialties" and "Acute Hemorrhagic Pancreatitis," respectively.—Drs. Juan H. Font and John L. Quinn, among others, addressed the Philadelphia Laryngological Society, May 2, on "Syphilis of the Middle Ear" and "Diagnosis and Treatment of Laryngeal Tuberculosis," respectively.

### VIRGINIA

**Promotions at Medical College**—At the midwinter meeting of the board of visitors of the Medical College of Virginia, Richmond, the following promotions were announced:

- Dr. Wyndham B. Blanton to professor of medicine.
- Dr. William R. Bond to professor of physiology and associate professor of pharmacology.
- Dr. Robert H. Courtney to associate professor of ophthalmology.
- Dr. Harvey B. Haag, professor of pharmacology and associate professor of physiology.
- Dr. Daniel D. Talley, Jr. to professor of roentgenology, succeeding the late Dr. Alfred L. Gray.
- Harry Lyons, D.D.S., professor of periodontia and oral pathology.

A portrait of Dr. Richard L. Bohannon, first professor of obstetrics and diseases of women and one of the founders of the Medical College of Virginia, has been presented to the college by his descendants, for the Founders' Room in the new library.

**Activities of Richmond Academy**—The Richmond Academy of Medicine has begun publication of a quarterly bulletin, the first issue dated March. The new bulletin is a part of a general reorganization undertaken by the academy since its new building was opened in September, 1932. The Richmond Ophthalmological, Rhinological and Otological Society recently voted to become the eye, ear, nose and throat section of the academy, and similarly the Richmond Pediatric Society is now the pediatric section. Other sections will be organized according to the bulletin. The academy has also inaugurated monthly clinical meetings to be in charge of Richmond hospitals in rotation. Drs. William Gerry Morgan and Wallace M. Yater, Washington, D. C., addressed the academy April 11 on "Hepatosplenography" and Dr. Frederick M. Hodges, "Therapy of Keloids." Drs. Isaac A. Bigger and Joseph Bear, spoke, May 9, on "Treatment of Superficial Burns" and "Treatment of Eclampsia," respectively.

### WISCONSIN

**Society News**—The Milwaukee Pathologists Society was recently organized with Drs. Edward L. Tharinger as president and Marcos Fernan-Nunez as secretary.—Dr. Chester C. Schneider addressed the Milwaukee Pediatric Society, April 19, on "Fractures in Children."—Drs. W. F. Lorenz, Madison, and James P. Simonds, Chicago, addressed the Milwaukee County Medical Society, Milwaukee, April 14, on "Neurosyphilis" and "Newer Problems in Immunity to Disease," respectively.—Dr. Walter M. Simpson, Dayton, Ohio, addressed the Milwaukee Academy of Medicine, April 18, on

undulant fever Speakers before the academy May 16 were Drs Lester M Wieder on 'Rhinoscleroma', James C Sargent, 'Careful Diagnosis and Conservative Management of Urinary Stones,' and J Edwin Habbe, 'Roentgen Findings in Splenomegaly'

**Radiologic Meeting**—Dr Arthur U Desjardins Rochester, Minn, was the guest speaker at the annual meeting of the section on radiology of the Wisconsin State Medical Society at Fond du Lac May 19-20 Dr Desjardins presented two addresses on 'The Action of Roentgen Therapy on Tuberculous Processes and Roentgen Therapy as a Means of Treating a Variety of Tumors' the latter at a joint session with the Fond du Lac County Medical Society Among Wisconsin physicians who presented papers were

Ernst A Pohle Madison Experience with the Protracted Fractional Dose Method  
Barton W Johnson Fond du Lac Early Diagnosis of Obstruction of the Ileum  
Theodore Sokow Kenosha Chondromatosis  
Harry R Foerster Milwaukee Radiodermatitis  
Harry B Podlasky Milwaukee Pathogenesis of Gastric Ulcer

## GENERAL

**Annual Session of American Heart Association**—Under the chairmanship of Dr Walter W Hamburger Chicago the American Heart Association will hold its ninth annual session in Milwaukee, June 13, at the Knickerbocker Hotel The program for the two sessions follows

Dr Currier McEwen New York, Cytologic Studies of Granulomata and Exudates from Patients with Rheumatic Fever  
Dr Edwin P Jordan Chicago Importance of Allergy in Rheumatism  
Dr Thomas Duckett Jones and Josephine McBroom AB Boston Studies on the Etiology of Rheumatic Fever  
Dr Katharine M Howell and Eleanor P Burton BA Chicago Dissection of Streptococci Obtained from Rheumatic Fever  
Drs Otto Saphir and Simon A Wile, Chicago, Rheumatic Manifestations in Subacute Bacterial Endocarditis in Children  
Dr Samuel A Levine Boston A Clinical Conception of Rheumatic Heart Disease  
Drs Charles S Stone and Harold Feil Cleveland Clinical and Pathological Study of One Hundred Cases of Mitral Stenosis  
Drs Clarence L de la Chappelle Irving Graef and Antonio Rottino, New York Relationship of Auricular Fibrillation to the Grade of Mitral Stenosis and the Presence of Active Rheumatic Infection  
Drs Bernard S Oppenheimer and Sidney P Schwartz New York Paroxysmal Pulmonary Hemorrhages The Syndrome in Young Adults with Mitral Stenosis  
Drs Soma Weiss and David Davis Boston Embolic Manifestations in Rheumatic Heart Disease  
Dr John P Anderson Cleveland Electrocardiographic Findings in Experimental Pulmonary Embolism  
Drs Arthur M Master and Harry L Jaffe, New York The Heart in Rheumatic Fever and Rheumatoid (Infectious) Arthritis  
Dr Ann P Purdy San Francisco Lesions of the Kidney Associated with Rheumatic Heart Disease  
Drs William Chester and Sidney P Schwartz New York Skin Lesions in Rheumatic Fever  
Dr Edward Sterling, Nichol Miami Fla. Rheumatic Heart Disease in Florida  
Dr Hugh McCulloch St Louis Convalescent Care of Cardiac Children  
Drs Thomas Duckett Jones and Edward F Bland Boston The Course and Prognosis of Rheumatic Fever and Chorea

**Medical Bills in Congress**—*Bills Introduced* S J Res 45 introduced by Senator Copeland, New York, and H J Res 158, introduced by Representative Eaton New Jersey propose to authorize an appropriation of \$10 000 for the expenses of participation by the United States in the Seventh International Congress of Military Medicine and Pharmacy S 1292, introduced by Senator Tydings Maryland, proposes to provide medical services after retirement on annuity to employees of the United States disabled by injuries sustained in the performance of their duties S 1515 introduced by Senator Copeland, New York, proposes to grant permits for the importation or manufacture for nonbeverage purposes of spirituous liquors of particular kind or quality where the supply in the United States is insufficient to meet the current need therefor H R 4346 introduced by Representative Kyale Minnesota, proposes to authorize an appropriation of \$250 000 for the extension and betterment of the state sanatorium at Ah Gwah Chung Minn H R 4885 introduced by request by Representative McKeown Oklahoma, proposes to establish a laboratory for the study of the criminal dependent and defective classes H R 5308 introduced by Representative Mead New York proposes to make available hospitalization and medical treatment in hospitals and relief stations of the United States Public Health Service to (a) officers of documented vessels who are holders of unexpired licenses of the United States Steamboat Inspection Service (b) seamen who have served forty days or more on a documented vessel during the year preceding application for hospitalization or treatment and (c) seamen whose wages were diminished by reason of contributions made to the fund for the relief of sick and disabled seamen H R 5326 introduced by Representative Granfield Massachusetts proposes to authorize an appropriation not to exceed \$500 000 to erect an addition to the Veterans Administration hospital at Northampton, Mass

**American Association for the Advancement of Science**—**Section N**—At the summer session of the American Association for the Advancement of Science in Chicago June 19-23 section N (the medical sciences) will sponsor four symposiums and a public meeting Headquarters will be at the Knickerbocker Hotel Monday morning June 19, the section will join with section C (chemistry) at Thorne Hall Northwestern University for a symposium on colloid chemistry as related to biologic problems with the following speakers

Edwin J Cohn Ph D Harvard Medical School Boston Electrostatic Forces in Systems Containing Biological Components  
Prof Theodor Svedberg Uppsala University Sweden Sedimentation Constants and Molecular Weights of the Respiratory Proteins  
Prof Filippo Bottazzi Naples Italy Physicochemical Properties of Concentrated Blood Serum

Tuesday morning June 20 section N will combine with section F (zoology) in a symposium with the following speakers

Prof Archibald V Hill London England Physical and Chemical Changes in Nerve During Activity  
Wallace O Fenn Ph D Rochester Minn Nerve Respiration  
Dr Ralph W Gerard Chicago Chemical Activity of Nerve  
Dr Herbert S Gasser New York, Electric Phenomena in Nerve

Wednesday morning a symposium on pathologic physiology will be held at Northwestern University, in which the following will participate

Dr William H Park New York BCG Vaccination  
Dr Charles H Best Toronto Fatty Changes in the Liver of Normal and Diabetic Animals  
Dr Arthur L Tatum Madison Wis Morphine Addiction and Morphine Tolerance  
Dr Maurice B Strauss Boston Etiology of Pernicious Anemia and the Related Macrocytic Anemias

Thursday morning June 22 a surgical-endocrinologic symposium will be presented at Northwestern by the following

Dr George W Crile Cleveland A Century of Progress in Surgery  
Anesthesia Antisepsis and Asepsis Shock and Careful Handling of Tissues  
Dr Max Ballin Detroit Clinical Recognition and Surgical Treatment of Parathyroidism  
Dr Percival Bailey Chicago Surgical Control of Hypophyseal Disorders  
Dr John deJ Pemberton Rochester Minn Recent Developments in the Clinical Recognition and Surgical Management of Hyperfunction of the Thyroid Gland  
Dr Everts A Graham St Louis Clinical Recognition and Surgical Management of Hypoglycemia Produced by Tumors of the Islets of Langerhans

It is expected that Madame Marie Curie Paris, co-discoverer of radium will address some of these meetings

A public meeting celebrating a century of progress in medicine will be held Tuesday evening June 20, in Thorne Hall The program arranged is as follows

Dr Morris Fishbein Chicago editor THE JOURNAL Frontiers of Medicine  
Dr Paul Dudley White Boston Heart Disease  
Dr Max Cutler Chicago The Conquest of Cancer

**Changes in Status of Licensure**—The California State Board of Medical Examiners has taken action on the licenses of the following physicians in the manner and on the date indicated

William H McLeod Kansas City Mo license revoked March 7 for his conviction of violation of the Harrison narcotic act  
George H Bland Fresno license restored March 7 placed on five years probation without narcotic privileges or possession also without possession of any of the derivatives of barbituric acid License had been revoked Feb 2 1932  
Woodward B Mayo Los Angeles license restored February 27 and placed on five years probation License revoked Oct 20 1931  
Francis M Collier Montrose placed on probation for five years without narcotic possession or privileges March 7  
Leighton R Cornman San Diego license restored February 27 and placed on probation for five years License suspended Oct 19 1932  
Theodore H Niemann Los Angeles license restored March 7, and placed on five years probation without narcotic privileges License revoked July 14 1932  
Archibald A Atkinson Sacramento license restored February 27 and placed on five years' probation without narcotic privileges License revoked Oct 22 1930  
Charles Bee Alexander Alhambra license restored February 27 and placed on probation for three years without any instructions as to narcotics alcohol etc License revoked July 12 1932  
Charles J Dean Portland Ore, license revoked March 7 because of his conviction in Oregon of violation of bankruptcy laws  
Samuel J Hindman Los Angeles license revoked March 1 for narcotic derelictions  
Charles M Stewart Los Angeles license revoked March 1 for violation of narcotic laws  
Simon R Zachariah San Francisco license revoked March 1 for narcotic violation

The Colorado State Board of Medical Examiners revoked the licenses of the following physicians at its meeting, April 4, for the reasons indicated

Charles Mortimer Stewart Los Angeles for violation of the Harrison narcotic law  
David Gordon Minneapolis for violation of the Harrison narcotic law  
William I Varnum Minnneapolis for unprofessional and dishonorable conduct This license was restored May 6

The Illinois State Department of Registration and Education, Springfield, recently reported the following action

William B. Carolus Sterling license revoked March 17 and Burget Rannels Milledgeville license revoked April 5 on the ground of false claims made by them in advertising matter as to their skill and the efficacy of their medicine for the treatment of specified diseases.

Joseph M. Blakemore Chicago license revoked March 8 for professional connection with an unlicensed person

Dr. Thomas J. Ney Chicago, license revoked January 6 on the ground of his conviction of manslaughter

Dr. Maurice J. Rablins Chicago license restored to good standing Dec. 20, 1932 it had been suspended April 13

Dr. Henry Jules Milestone Chicago license suspended Dec. 16, 1932 for gross malpractice use of narcotics and making false statements

The Board of Regents of the University of the State of New York reported the following revocation

Dr. William A. Robison Medina, N. Y. license revoked February 16 on the grounds of having committed an abortion and of fraud and deceit in the practice of medicine

The State Board of Medical Education and Licensure of Pennsylvania reported the following

Dr. William H. Kelsea East Brady, Pa. license revoked March 31 because of his conviction in Clarion County courts of having performed an illegal operation

## FOREIGN

**Jewish Physicians in Germany**—The *Münchener medizinische Wochenschrift* for April 28 makes the following notations relative to the status of Jewish physicians under the Hitler regime

Regarding the numerous measures against Jewish physicians in the various states of Germany, no further details are noted since it is the aim of the federal government, in its crusade against the invasion of foreigners into German medical practice [of 6,000 Berlin physicians, 4,500 are reported to be Jews] to prepare a suitable legal foundation and thus to reduce as far as possible the severity against the Jews who have ingratiated themselves to their country. A decree of this type—which will nullify many local regulations—is the decree of April 23 of the national minister of labor concerning the admittance and continuance of occupation of physicians employed by sickness insurance companies. It is made public in the newspapers *Reichsanzeiger* and *Reichsgesetzblatt* [organs for publication of federal laws]. The decree excludes all non-Aryans from future admittance to sickness insurance practice. Also physicians who have been active in the communist party will not be admitted. Non-Aryan physicians, as well as communist physicians, already admitted to sickness insurance practice must be dismissed. According to the law of rehabilitation of professional officials, exceptions are made of non-Aryan doctors who during the World War either fought at the front or were physicians at the front or at military contagious disease hospitals, or whose fathers or sons died in the war. These exceptions do not include physicians who were communists. Physicians admitted to practice before August, 1914, may be retained so far as they were not communists. Thus, the law has been changed by these new specifications. The elimination of already admitted physicians takes force on July 1, 1933, first by means of the associations of insurance physicians; however, the physicians concerned may appeal within two weeks to the federal ministry of labor, which renders the final decision. The appeal is submitted to the executive committee of the association of the physicians of Germany, which forwards it together with an expert opinion to the minister of labor. The physician is not permitted to decline the continuation of his activity on the grounds that his admission will terminate by the new regulation. The application for admission has to be accompanied by (a) certificate of birth and certificates which indicate that the applicant as well as his parents and grandparents, are not full blooded Jews. (b) Non-Aryan physicians who have a right to be admitted must bring proof that their fathers or sons have died in the World War or that they have themselves participated in the World War. In this connection proof has to be brought regarding their military or medical activity at the front or in the military hospitals. In addition to this a certificate of approbation and certificates indicating the former practical, clinical and other medical activities are to be included. The final decision in matters of admission is rendered by the arbitration office of the superior insurance office which has the physicians' register.

'Reports are on hand from Bulgaria, Belgium, Holland, Sweden, Egypt, Czechoslovakia and Rumania that all the Jewish doctors of those respective countries have united in a common boycott against German chemical preparations.'

Prof. Dr. Israel was granted a leave of absence from the Bier clinic in Berlin.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 22, 1933

### The London County Council and the Consultants and Specialists

The controversy with the London County Council in connection with the employment of consultants and specialists has entered a new phase. At a meeting at the British Medical Association house of consultants and specialists, it was resolved to ask the council of the association to take further action on behalf of the consultants in view of an offer of the Voluntary Hospitals Committee to act as mediator, and not to proceed now with the plan of withdrawal. The council considered the matter. The chief complaint of the consultants is that they were not consulted as to the details of the new scheme. The chairman of the council of the association complained of the attitude of Sir Frederick Menzies, chief medical officer of the London County Council who described Dr. Anderson, medical secretary of the association, as fomenting "a strike campaign." Dr. Anderson was only acting on instructions from the association to establish its policy. It was claimed that in dealing with professional appointments to public hospitals the responsible authority should give the profession the opportunity of stating its views on any scheme of organization for such service. Lord Dawson, president of the Royal College of Physicians said that the position was critical. Two years ago the London County Council undertook the stupendous task of converting 100,000 beds previously run on infirmary lines, into the status of hospital beds. An academic atmosphere had been gradually introduced into these municipal hospitals. Physicians and surgeons accustomed to teach had taken part in the work and its standard had been raised. The linkage had been brought about by free consultation between the chief medical officer of the county council and the deans of the medical schools. In this controversy it had to be remembered that the London County Council was a political body and was larger than most of the parliaments of Europe. On the instructions of the council, a letter was sent to the chairman of the Central Public Health Committee of the London County Council expressing the hope that in spite of misunderstandings it would accept the offer of a friendly conference through suitably appointed representatives with a view to a solution that would insure the widest possible field of applicants to fill positions in the service, and the greatest efficiency of the service. There is really no reason why a satisfactory understanding should not be reached.

### Deaths from Injection Treatment of Varicose Veins

In a previous letter (*THE JOURNAL*, May 14, 1932, p. 1754) it was pointed out that the injection treatment of varicose veins is not quite so safe as is generally supposed. Pulmonary embolism has generally been the fatal complication. In reviewing 120 cases in which he had performed necropsies, Sir Bernard Spilsbury found that the injection treatment of varicose veins was the cause of death in three cases in two of which sodium salicylate and in one of which sodium morrhuate had been injected. A little later another case was the subject of an inquest. A week after injection at the German Hospital, London a woman, aged 62 suddenly became faint while doing her housework and died before medical aid could be summoned. The necropsy showed that the cause of death was a tubular clot in the heart. Another fatal complication of the injection treatment has now come to light. An inquest was held on two patients who died of septicemia following the injection of sodium morrhuate for varicose veins, at a hospital. They were members of a group of twelve patients who were injected at the

same time. The majority did not suffer any ill effects, but in one case an abscess developed locally. In all three cases the causal organism was *Staphylococcus aureus*. The source of infection could not be determined. Infection from the needles was excluded. The 5 per cent sodium morrhuate solution was made up at the hospital according to a practice followed in a series of more than 10,000 injections without incident and involved sterilizing at a temperature just below boiling in the presence of 0.5 per cent phenol. But a specimen of the solid sodium morrhuate supplied to the hospital and sterilized there in bulk, gave a rich growth of a staphylococcus on blood agar after forty-eight hours' incubation. Possibly the sterilization in bulk presents greater difficulties than is supposed. It is stated that other cases of infection following injections of veins have occurred in other hospitals, but they have not had results to give rise to an inquiry.

#### Appeal to Diabetic Patients by H G Wells to Help Research

Asthma research in this country has been organized and financed by sufferers from the disease, which was a new departure in the promotion of research. In a letter to the *Times* Mr H G Wells the author, has invited his fellow sufferers from diabetes to follow this example. He points out that, thanks to a regulated diet and to insulin they are living active, happy lives, while a few years ago many would have been uncomfortable and dying slowly or already dead but for the work of a small group of experimenters and practitioners who have brought this particular maladjustment under control. He says that they can contribute to the research "that is still perfecting the very precise and beautiful treatment and help others not so well off. The diabetic department of King's College Hospital has been carried on for some time under increasingly cramped conditions and now has a special opportunity for expansion. In 1932 it dealt with 2,472 diabetic patients and the number still increases. Mr Wells suggests that the elect class of grateful diabetic patients should tax themselves for the benefit of the cult. He is rather surprised that they have not already formed an association to watch over and extend 'this most benign branch of medical science.'

#### The Key to the Leprosy Problem

Sir Leonard Rogers, the leading authority on leprosy speaking at a meeting of the British Empire Relief Association, said that, if infection of children could be prevented, leprosy would die out. The value, in not too advanced cases of injections of soluble forms of the active principle of chaulmoogra and hydrocarpus oils had now passed the realms of controversy. If the house contacts of all discovered cases were examined repeatedly for ten years to detect and clear up in the early stages—during which time the advanced cases would nearly all have become fatal—there would remain too few contagious cases to maintain the disease. The efficacy of this plan had been proved in Nauru Island in the Pacific and in the southern Sudan. In the Sudan, 6,500 cases were found in an infected area. The 4,800 infective patients were put into a colony and treated, and within the last year 2,230 had been discharged free from all signs of disease. Children were the key to the leprosy problem.

#### Tsetse Fly Control

The tsetse fly is still a great evil in many parts of Africa and prevents economic progress in large stretches of territory. Even in areas that are settled there is the danger that an advance of the fly may make a heavy toll of life. In extreme cases it may be necessary to evacuate the population and surrender the territory to the fly. The measures adopted for its destruction differ according to the kind of fly and even for the same fly in different districts, according to variations in the terrain and in the habits of the natives. They include destroy-

ing fly-infested bush by clearing or by fire erection of barriers to isolate the fly and infected game, and the wholesale catching of flies by hand or in specially made traps. By these methods, considerable areas of land have been made available for occupation. The Tsetse Fly Committee is confident that in suitable areas it will be possible to eradicate tsetse flies at relatively small cost. But for this special work technical knowledge will be necessary and, where wide areas are infested, a small organization of specially trained men must be maintained.

#### Outbreak of Typhoid

In the Malton urban district of Yorkshire, in six weeks 235 persons or 5 per cent of the population, contracted typhoid. The outbreak was due to pollution of the public water supply which is derived from a local well a source which the district council was urged forty years ago by the local government board to abandon by reason of its liability to pollution and the associated high incidence of diseases of the enteric group. On the present occasion the cause was access to the public water supply of the excreta of a typhoid patient who had been admitted to the public assistance institution and within two months 270 persons contracted the disease and 23 died. There were no cases of typhoid in the urban district until Sept. 23, 1932, when the patient mentioned was admitted to the institution. On September 26 he was found to be suffering from typhoid but he was not removed to an isolation hospital until October 26. His excreta were drained into the river Derwent—the common sewer of the town—by a broken drain, allowing soakage of part of its contents into the soil and polluting it with infection which gained access to the water supply. Malton had an exceptional incidence of typhoid during the seventies, eighties and nineties of the last century. It is noteworthy that this should have been repeated after such a long interval and have been due to the same vehicle. Improved sanitation is now being introduced.

#### PARIS

(From Our Regular Correspondent)

April 5, 1933

#### Deceptive Methods in Medical Advertising

Competition between manufacturers of pharmaceutical products has led to the invention of shrewd or even deceptive, methods for attracting the attention of physicians to their special products. Series of lectures on cancer, held in the town-halls in the provinces, and having all the appearance of a scientific course for the promotion of health and having the endorsement of the minister of public health, have been found to be mere advertising schemes. The speaker, after a comprehensive discussion on cancer, which betrays no evidence of personal interest ends finally with an exposition of a mode of treatment and the recommendation of a pharmaceutical specialty as an infallible remedy, whereas an investigation often reveals that the lecturer is in the secret employ of the manufacturer of this remedy. Bombarded by complaints from physicians who had attended these lectures in the department of Charente-inférieure the prefect, on order of the minister, prohibited the continuance of the lectures. The mayors of rural communes have been instructed to refuse permission to hold lectures in municipal halls unless the lecturer agrees to abstain from all propaganda of a personal type. In another instance, the deception took a different form. A handsome young woman, tastefully attired, presented herself as a client at the consultation room of a number of dermatologists. She had come she stated, to inquire whether the physician would be able to remove certain tattoo marks that had become displeasing to her. The tattoo marks, as was revealed when she partially disrobed, spelled out the name of a pharmaceutical product. She explained then to the practitioner that, having been cured of a lingering disease by this marvelous product she had decided to have the name of

the product tattooed on her person as an enduring testimony of her gratitude. At the same time, she utilized her opportunity to laud the virtues of the product to the physicians. The physician smiled, told the young woman to dress, and usually sent her away without further discussion. Sometimes, however, a physician took the matter seriously and consented to remove the tattoo marks. In that case, a day was set for the operation but the young woman failed to appear. But the effect desired was produced and, in either event, the name of the product remained engraved on the mind of the physician.

#### Clinical Diphtheria in Some Vaccinated Persons

Cases of diphtheria arising in persons previously vaccinated against the disease are exceptional. They have been known to occur after even one year. It is assumed that the immunity conferred by the anatoxin was insufficient. The conclusion is that it is necessary to use an anatoxin with a high content of antitoxic units, and to administer rigorously, at intervals of fifteen days, the three injections required by Ramon. Mr Scapier has recently observed two peculiar and troublesome cases. Both children had been vaccinated in a perfectly proper manner, one three months and the other five months before being taken ill. Both patients were affected with pseudomembranous angina, the diphtherial character of which was clinically evident.

The false membranes when examined in the laboratory did not show the presence of Löffler's bacilli either by direct examination or on cultivation. Nevertheless, in view of the significant progressive development of the symptoms Scapier did not hesitate to administer copious injections of antitoxin, whereupon the symptoms promptly receded. In both cases the absence of Löffler's bacilli cast doubt on the diagnosis, but the success of the treatment was conclusive. Scapier raises the question: Did the Ramon anatoxin create an allergic state that prevented the development of Löffler's bacilli in their complete form but permitted nevertheless the development of the virus in a filtrable and invisible form, derived possibly from a vaccinated germ carrier, and against which the antidiphtheric serum was able to act from a clinical point of view (it being a recognized fact that the serum does not act directly against the bacilli but against the diphtheria toxin)?

#### Another Method for the Diagnosis of Pregnancy

The *Presse medicale* publishes an article by R. Masciottra and R. Martinez of Hoz which announces a simplification of the Aschheim-Zondek procedure for the early determination of pregnancy. It is based on a series of experiments all of which were concordant, which showed that the injection of the prehypophyseal hormone into the guinea-pig of either sex and irrespective of the dose, produces, within the first twenty-four hours, an increase of cholesterol in the blood amounting to from 30 to 50 per cent. The urine of pregnant women injected into the guinea-pig provokes exactly the same effects. The authors deduce from this fact that this reaction which is constant, will make it possible to simplify the application of the Aschheim-Zondek test. The guinea-pig is easy to handle and the determination of the cholesterol in its blood is easy with the Grigaut method of analysis, without its being necessary to kill the animal as is done when the rabbit, the rat or the mouse is employed.

#### Exchange of Children of Physicians During School Vacations

International exchanges of students between universities of different nationalities have become rather common in recent years. The Association professionnelle internationale des médecins, at its sixth annual session, in Budapest in 1931, was requested by one of its members, Dr Schaeftgen of Luxembourg, to assume the control of exchanges of children belonging

to the families of physicians. He emphasized the value of such an exchange of children of members of one of the thirty-one national groups of which the association is composed. A physician would need to pay only the traveling expenses of the child. Furthermore, the exchange being made between physicians' families, there is less hesitancy about sending a child into a foreign country, particularly if the exchange is preceded by a questionnaire giving full information. The idea was approved by the assembly on condition that the association would not be expected to assume the responsibility but would confine itself to establishing a connection between the various national groups, who would then perfect the details. It was decided that a report should be presented at the next session, by Dr Schaeftgen and Dr Drooglever Fortuyn (Netherlands), to determine the conditions to govern exchanges of children between families of physicians, also to draw up the questionnaire to be sent to each applicant, in order to determine the kind of life that would await the child at his destination. The report was presented at Budapest at the 1932 session, and was approved. The regional groups will make known their views at the London session next September.

#### BERLIN

(From Our Regular Correspondent)

April 24, 1933

#### Regulations Pertaining to Necropsies and Cremation

The federal minister of the interior, with a view to the enactment of a federal law governing necropsies, requested the federal bureau of health to secure from the governments of the various *länder* the regulations governing necropsies within their jurisdictions. In Prussia there are no uniform regulations. Necropsies are left to the discretion of the local authorities. It is planned to incorporate in the new federal law regulating necropsies uniform regulations governing cremation. Hitherto there have been no federal regulations governing cremation, and the laws of the *länder* are by no means uniform. A federal law pertaining to necropsies would provide that they may be performed only by licensed practitioners of medicine. The inquest or necropsy, must establish the fact and the cause of death. If the cause of death is not certain and if there is any suspicion that the deceased did not die a natural death, dissection of the body by the sanitary police must be ordered.

#### The Training of Neurologists

The Deutsche Gesellschaft für Innere Medizin requested its directorate, some time ago to inquire into the contention of psychiatrists that neurology at the universities be taught within the psychiatric-neurologic clinic and that furthermore general neuropsychiatric departments and department heads be created in the hospitals. The *gesellschaft* urged that for historical, practical, scientific and pedagogic reasons such a one-sided solution must never prevail. Neurology with respect to research, theory and practice should continue to be regarded as a legitimate branch of both internal medicine and psychiatry. Taking due account of local conditions and personal qualities both internists and psychiatrists should be allowed to practice in the field of neurology. In clinics of internal medicine and in hospital departments neurologic services should be carefully differentiated, as is already the case in psychiatric institutions. In any event, the specialist in internal medicine and nervous diseases must continue to be recognized.

#### Regulations Concerning Venereal Disease in Prisons

The Federal Council on Health proposed some time ago, regulations for combating venereal disease in prisons and they have been generally adopted by the *länder*. The provisions stipulate that a prisoner with a venereal disease, even though it may not at present show any clinical manifestations, must

accept the treatment that his condition requires. In case such treatment cannot be administered in that institution, the prisoner should be transferred to a suitable institution or hospital. Infective patients must be hospitalized under conditions that exclude transmission of the disease to others. Utensils used by the patient should be marked and restricted to the patient's use. Before the patient is released he should be reexamined, if possible, to determine whether he is still infective and, if so, his case should be reported to the health authorities.

### Sex Instruction in the Schools

The Badische Gesellschaft für soziale Hygiene recently called a conference of teachers, pastors and physicians, who, after deliberation, set up the following criteria:

1 Sex instruction in the schools shall be extended to pupils 15 to 16 years of age and to corresponding age groups of the continuation industrial and trade schools.

2 The subjects covered by the instruction shall be (a) the relation between the sexual instinct and morality with especial emphasis on personal and social responsibilities, (b) the biologic aspects of propagation and (c) the connection between sexual instincts and health hazards.

3 Instruction in these subjects shall be delegated to the physician. If a suitable woman physician is available she should be given charge of sex instruction for girls.

4 Sex instruction should be given in connection with discussions on general hygienic problems in organized classes but not in too large groups. The instruction should cover a period of about two hours and should form a part of the regular curriculum.

### Professor Wagenmann's Birthday

On April 5, Prof. August Wagenmann, occupant of the chair of ophthalmology at the University of Heidelberg, celebrated his seventieth birthday. In his native city Göttingen Wagenmann became an assistant under Theodor Leber. In 1892 he accepted a chair in the University of Jena, where he remained eighteen years, and in 1910 became Leber's successor in Heidelberg. Wagenmann's research has been chiefly in the field of pathologic anatomy. For his research on the results of division of the optic nerve, Wagenmann was awarded the Graefe prize. He published also a comprehensive work on injuries of the eye, with especial reference to injuries due to accidents. For many years, Wagenmann was secretary of the Deutsche ophthalmologische Gesellschaft, of which he is now president.

### Personals

Prof. August Gärtner, the dean of German hygienists, celebrated in Jena his eighty-fifth birthday, April 18. Like so many German scientists, he received his first training at the military medical school. In 1884, he was summoned to the federal bureau of health as assistant to Robert Koch. Two years later, he obtained the chair of hygiene at the University of Jena, which he retained until 1914. He carried on scientific studies in many fields, a dysentery bacillus bears his name, but it was in the field of water hygiene that he became an eminent authority, his opinions being often sought by foreign countries.

Prof. Alfred Denker, an authority in laryngology, rhinology and otology and for many years ordinarius at the University of Halle, now residing in Munich, completed his seventieth year April 19. Professor Denker achieved fame through research on deafness, deafmutism and education of deafmutes. He introduced also new operative methods for chronic suppurations of the maxillary sinus, and for tumors of the nose and of the hypophysis.

### Prof. Roderich Stintzing Is Dead

Geheimer Medizinalrat Roderich Stintzing, who from 1890 to 1924 was the director of the medical University Clinic in Jena, died April 6, aged 79. In collaboration with Pentzold he published the *Handbuch der gesamten Therapie*, which has passed through six editions and to which Stintzing contributed a number of important chapters. He prepared also a new edition of Roth's *Chemische Terminologie*.

## JAPAN

(From Our Regular Correspondent)

March 29, 1933

### Awards to Scientists

At the general meeting of the Imperial Academy of Japan, February 12, the special committee announced the awards of the imperial prizes and others for 1932. The imperial prizes were given to Dr. J. Tsuji of the Physical and Chemical Research Institute for his researches on the elasticity of light and to Prof. B. Suzuki, D.Sc., of the Kyoto Imperial University for his work on fatty acids. The academy prize was awarded to Prof. M. Ishimoto of the Tokyo Imperial University science department for his seismological observations. The emperor's wedding commemoration prize, contributed by the Osaka *Mainichi* (daily paper) was given to Prof. S. Kusano, D.Sc., of the Tokyo Imperial University for his work on fungi to Prof. C. Oguchi, D.M., of the Nagoya Medical College for his research on Oguchi's disease to Prof. Y. Furutake, D.M., of the Osaka Imperial University for his discovery of kynurenin, a crystal chemical compound, and to Prof. H. Nomura, D.Sc., of the Sendai University for his study on the pungency of ginger.

### Studies of Menstruation in Working Girls

Dr. Y. Sato has been studying for a long time the physical and mental condition of young girls who work as conductors of motor busses. The municipal tramcar bureau of Tokyo in 1924, inaugurated the omnibus service in the capital and ever since has employed about 700 single girls as conductors. They work from 6 in the morning to eight in the evening, one drive covering 10 miles or so, which they do seven or eight times a day. Sato, a physician on the staff of the hospital attached to the municipal bureau, studied the duration of menstruation of 220 of these girls who came to his office to consult about diseases of women. They were from 17.3 to 32.2 years of age.

### Menstruation in Working Girls

Duration of Menstruation	Number of Girls	Percentage
8-10 days	6	2.73
7 days	67	30.45
6 days	8	3.64
5 days	34	15.45
4 days	47	21.36
3 days	40	18.18
2-1 days	5	2.27
0 days	13	5.91

Since they began this bus work among 140 girls examined, 24 girls had an increased flow while 12 had a decreased flow, 15 menstruated a longer time and 22 for a shorter time, 59 had more pain, while 3 stopped having pain. These changes occurred mostly from four to six months after they were employed, but gradually these changes disappeared and they menstruated as formerly.

### Decrease in Medical Students

The entrance examinations for medical and pharmaceutical colleges were held as usual, this month throughout the country. The number of candidates was considerably smaller, to the astonishment of the authorities. Last year some private colleges were charged with accepting bribes from candidates for entrance. At that time the education office said it would supervise the examinations more closely. The decrease in the number of candidates is attributed partly to this and partly to the business depression. One pharmaceutical college that was censured last year had only 660 candidates this year as compared to more than 1,200 in the previous year. Of the eight private medical colleges and two pharmaceutical colleges in Tokyo, the Keio Medical College had an increase of only ninety this year, but the rest had a decrease.

## BUCHAREST

(From Our Regular Correspondent)

March 31, 1933

## Draft of the New Law on Social Insurance

In the new Rumania there are three systems of social insurance—one in Transylvania, by which system all districts comprising two or three counties have autonomous organizations, another system in the old kingdom, and the third one in Bessarabia. The government has not as yet interfered with the administration of the three organizations. Now a new law has been drafted to unify the three systems. The principal paragraphs of the proposed law are as follows:

Compulsory insurance is ordained for all classes of employees for sickness, invalidity and accidents, without regard to their age, sex or nationality, if their wages do not exceed the fixed maximum. Also independent craftsmen may become insured under special conditions enumerated in the law. The restrictions are as follows: The employees of state enterprises who were insured by their own special benefit societies before this law is enacted may continue this insurance with their societies, provided the benefits supplied by them are at least as much as is required by the new law. For this reason these special societies are obliged to have their regulations approved by the central board of social insurance. Apprentices and unpaid probationers, also members of the families of employers, must be insured. The pay office in Transylvania and the Banat will merge and their members continue to avail themselves of the insurance corresponding to the requirements of the law. The employees of the state, counties, municipalities or other public institution to whom the general pension law does not refer, are obliged to take out insurance against sickness and invalidity. Employees of the foregoing public institutions who have no pension are not obliged to be insured for old age and invalidity. The latter categories of employees may apply to the central board of social insurance for permission to be insured against sickness, but only under special contracts made with their organizations.

The insured are entitled to medical attendance, drugs and dressing materials, a monetary subsidy in case of sickness, accidents, maternity and death and a whole or partial invalidity pension. Medical treatment is extended also to a wife living with her husband, to children under 16 years of age, and to disabled parents. If hospital treatment is needed, the insurance office pays for attendance up to twenty-six weeks but the insurance council may lengthen this period to one year at most.

If financial conditions permit the office may pay the cost to members of sojourns at climatic resorts and mineral springs, and of dental prostheses. Relatives get drugs only. A monetary subsidy is paid for twenty-six weeks only.

Maternity help is given to an insured person for twelve weeks, the sum of the subsidy is equal to that allowed in case of sickness. After this, the mother is entitled to a six weeks nursing subsidy. The wife of an insured person is entitled, in case of childbirth, only to free medical attendance and drugs, but if the financial condition of the insurance office allows she may get 50 per cent of the subsidy, due to her husband, for six weeks.

An invalidity pension is granted to members who owing to old age, accident or sickness, are not able to earn one third of what they earned when in full health. The pension consists of a fixed sum. Pensioners get free medical attendance and drugs, in case of death, the relatives get a burial subsidy. The wife of a deceased pensioner, if disabled and poor gets 50 per cent of the pension of her late husband, children under 16 get one third of the pension of their late parents. The sum total of the pension of the widowed mother and orphan children cannot exceed the sum of the pension which the father received.

Half of the charges for insurance have to be paid by the employer and half by the employee. The weekly charges are

fixed by the general meeting of the central office and has to be sanctioned also by the council of ministers. The state contributes to the invalidity burden 15 000 000 lei yearly and later will add some state obligations and treasury notes, the amount to be fixed at a later date.

## SICK BENEFIT CLUBS

Not less than 10 000 members may form a sick benefit club in any one district. The sick benefit clubs are administered as follows: A council, consisting of from twelve to twenty-four members with an equal number of employers and employees, is appointed on the recommendation of the chamber of commerce and trade and the chamber of work, by the minister of public works. The minister appoints three members, consisting of one physician, one engineer and one lawyer. The council prepares the budget, settles affairs pertaining to its sphere of action and appoints clerks and an auxiliary medical staff. The control committee manages the agenda of the general meeting and the finances. The medical committee, of from three to seven members, has as its president the physician-in-chief, who gives advice in medical affairs.

The central sick benefit club controls the other clubs and handles the funds. Its personnel is made up of the general assembly, the administrative council and the general management. The general assembly is made up as follows: The administrative council of every club delegates two employers and two employees, if a club has more than 25 000 members, it delegates four members. All the late ministers of public work are members. The manufacturers, craftsmen, employees, physicians, pharmacists, engineers and so on in all eleven such groups, contribute nineteen members. The national medical association is represented by two members. The professor of social politics at Bucharest University is a member. The ministries supply ten members. Two senators are delegated by the senate, to hold office for four years. The general assembly expresses its opinion on drafts of bills, determines the maximal wages for those intending to be insured, determines the categories of subsidies, and elects the administrative council and the executive committee.

## THE MEDICAL ORGANIZATION

The Medical organization of the social insurance scheme comprises the following medical categories: (a) Physicians of the central institutions, the physicians-in-chief and medical inspectors of the sick benefit clubs, who are in the same category as the physicians of the public health directorate. The chief physicians of the social insurance in regard to salary are on a par with the medical chiefs of the county. Hospital physicians, radiologists, bacteriologists and pharmacists get the same salaries as those appointed by the public health directorate. (b) Hospital and sanatorium physicians, likewise the chief physicians of the outdoor departments, radiologists, bacteriologists and specialists, who attain their position by competitive examinations. (c) Assistant physicians, who get their appointments by entrance examinations. In case of epidemics contract physicians may be employed. In larger centers on the request of the directorate of the respective sick benefit clubs, 'free choice' medical service can be had. The minister has the right to suspend the execution of any resolution.

## PUNISHMENT

Fines ranging from 2 000 to 10 000 lei and imprisonment from fifteen days to two months may be imposed on employers, clerks or physicians who issue false documents and certificates. In the case of physicians, a decision can be made only by the medical councils.

## The Association of Balkan Physicians

The physicians of Yugoslavia, Bulgaria, Greece and Rumania have found an association to further medical science. The

Rumanian section held its constitutional meeting last week, under the presidency of professor Marinescu of the Bucharest university. The main point for discussion was the request of the association for cooperation in regard to the prophylaxis of tuberculosis and malaria. The Rumanian section accepted the principles of the union. The secretary of the Rumanian section occupies the house of the Rumanian Medical Association, Bucharest, Strada Isvor No 16.

#### Public Health in Rumania

According to statistics published by the ministry of health in 1932, 80,000 persons with open tuberculosis are on the register, the majority of whom are in special hospitals. Those in their homes are periodically supervised by the nearest dispensary medical officer. Of 20,000 trachoma patients registered, 10,000 are in Bessarabia. The number of registered pellagra patients in the past year was 47,872. The fight against these diseases cost 20 million lei last year.

#### BUENOS AIRES

(From Our Regular Correspondent)

March 1, 1933

#### Can Rats Survive After Suprarenalectomy?

Ever since Lewis demonstrated in 1921 that the majority of white rats survive the complete removal of the suprarenals, the fact has been confirmed in hundreds of rats at Buenos Aires and in Rosario. Nevertheless experiments recently performed by some American workers led to different results. The survival or death of the rats depends on the nutritional condition of the animals when the experiment is done. Rats bred at the Instituto de Fisiologia of Buenos Aires and Rosario and fed on bread and milk survive at a rate of from 50 to 100 per cent at the end of the first month after suprarenalectomy, while rats recently brought from some other breeding places and deprived of their suprarenals at the same time die at a rate of from 70 to 100 per cent in the first month following the operation. However, if the rats brought from some other breeding places are kept and fed at the Instituto de Fisiologia for a month or so before the operation and if the animals have not infected lungs, they survive the operation in a rate of from 50 to 100 per cent. The symptoms of suprarenal insufficiency of the surviving animals last about three weeks. Then the animals slowly and gradually compensate. The grave symptoms following suprarenalectomy disappear on the administration of extract of the suprarenal cortex. In the entire group of surviving animals, accessory suprarenals appear at the end of the first month or a month and a half after suprarenalectomy has been performed. During the first fifteen days following the operation the accessory suprarenals are not discoverable, but later on they appear, a fact that was pointed out last year by Lascano Gonzalez.

#### Scholarships for Graduate Studies

Dr Rodolfo Lobo was awarded the scholarship given by the Devoto Foundation, for 1932, to study toxicology in Europe. Drs Odoriz and Castro O Connor were awarded the scholarships recently created by the Prince of Wales at the Oxford University to study physiology of the nervous system and endocrinology, respectively. Dr J Cid of Rosario was awarded one of the Guggenheim scholarships for 1932 in the United States, to study histopathology of tumors of the nervous system. Dr Orias returned from the United States after a stay of two years at Western Reserve, Harvard and Woods Hole and other research centers in the United States. Dr J M Lascano González will soon return from Freiburg after working two years and a half with Professor Aschoff. Dr Orias was awarded a scholarship of the University of Buenos Aires and another scholarship of the Rockefeller Foundation.

#### Treatment of Hydrocyanic Acid Poisoning

Dr Hug, professor of pharmacology of the Faculty of Medicine of Rosario, has reported the results of experiments which tend to elucidate the mechanism of the treatment of hydrocyanic acid poisoning. Reports of his experiments performed during the last three years have been published in the *Revista de la Sociedad Argentina de Biología* and other medical journals. According to Professor Hug, the substances capable of action on hydrocyanic acid may be classified into three groups: substances that contain sulphur, sugars and their derivatives, and methemoglobin-producing substances. In the first group are sodium thiosulphate, glutathione, cystine and some other substances, the most active substance seems to be sodium tetrathiocyanate, which, according to work performed by Chistoni and Foresti, is capable of transforming in vitro cyanides into sulphocyanides. While the second group has not been as yet studied by the author, according to experiments by Forst and Rentz it seems that preference should be given to dioxyacetone. In the third group the best results were obtained with sodium nitrite. To prove the therapeutic value of these substances, dogs were injected subcutaneously with progressive doses of hydrocyanic acid. As soon as the first grave symptoms of hydrocyanic intoxication appeared, the animals were given an injection of a solution of the antidote intravenously. Four antidotes were tested and the results obtained were as follows:

Dogs given an intravenous injection of sodium thiosulphate, sodium tetrathiocyanate, methylene blue or sodium nitrite in doses of 1 or 15 Gm, 0.2 Gm, 18 mg and 40 mg, respectively, per kilogram of body weight, at the appearance of toxic symptoms caused by the subcutaneous injection of 127, 3, 2 or 4 fatal doses of hydrocyanic acid, respectively, did not die in the experiment. Larger doses than 0.2 Gm per kilogram of body weight of sodium tetrathiocyanate are toxic. Pyrogallol, pyrocatechin, phenylhydrazine and potassium ferrocyanide are also methemoglobin producing substances. Potassium ferrocyanide, however, has an antidotal action only when in presence of laked corpuscles, since it does not permeate the erythrocytes. Professor Hug at present gives his greatest attention to methemoglobin-producing substances. He has been able to note that the hemoglobin derivatives that are formed with various substances do not fix hydrocyanic acid in the same manner in which methemoglobin forming substances do. Methemoglobin formed by sodium nitrite fixes hydrocyanic acid in an equimolecular proportion (taking 16,700 as the molecular weight of hemoglobin). According to the author, the fundamental reason for the neutralization of the poison by these substances is the fixation of the hydrocyanic acid by the methemoglobin in the blood. The limitation of the antidotal activity of sodium nitrite depends on the maximal quantity of hemoglobin changeable to methemoglobin, without killing the animal by anoxemia. In the dog a dose of 40 mg of sodium nitrite per kilogram of body weight is the maximal dose and this may kill the animal in some cases. This dose changes more than 50 per cent of the hemoglobin into methemoglobin. These studies indicate that the almost simultaneous administration of antidotes of the different groups may result in a summation of effects. Hug notes the excellent results reported by Geiger and by Hanzlik in THE JOURNAL (Dec 3 1932, p 1944, Feb 4, 1933, p 357) from the use of methylene blue as an antidote. He believes that his experiments indicate that the results obtained with sodium nitrite ought to be even better. Since the tolerance of man to sodium nitrite is not yet known, the author advises the slow injection of a 20 per cent solution not to exceed the total dose of 1 Gm (50 cc of this solution) for an adult. The author advises the alternate use of injection of sodium nitrite with intravenous injections of 10 cc of a 3 per cent solution of sodium thiosulphate.

## Marriages

CHARLES HOWARD KINGSBURY Gillett, Wis, to Miss Grace Campbell of Milwaukee in Chicago, April 13

HERBERT RICHARDSON DOVE, Colonial Heights, S C, to Miss Helen Turner of Spartanburg, April 8.

BEN W BIRD, JR., Princeton, W Va, to Miss Lucile Dunlap of Cairo, Ill, April 9

WILLIAM HOBSON WOODY to Miss Sarah Anne Melher, both of Baltimore, April 24

ROBERT LOUIS LEE, Kansas City, Kan, to Miss Robbie Archer at Turner, March 4

## Deaths

Henry Andrews Cotton ♂ Lawrenceville, N J, University of Maryland School of Medicine, Baltimore, 1899, member of the House of Delegates of the American Medical Association 1921-1922, member of the American Neurological Association, American Psychiatric Association, New England Society of Psychiatry, Association for Research in Nervous and Mental Diseases, American Psychopathological Association and the Society of American Bacteriologists, veteran of the Spanish-American and World wars, corresponding member of the British Medico-Psychological Society, for many years medical director of the New Jersey State Hospital Trenton, author of "Defective, Delinquent and Insane", aged 56, died May 8, in Trenton, of angina pectoris and coronary embolism

Byron Bennett Davis ♂ Omaha, Minnesota Hospital College, Minneapolis, 1884 member of the House of Delegates of the American Medical Association in 1902, professor of principles of surgery and clinical surgery and chairman of the department, University of Nebraska College of Medicine, past president of the Nebraska State Medical Association, member and past president of the Western Surgical Association on the staffs of the Immanuel Deaconess Institute, Bishop Clarkson Memorial and the Nebraska Methodist Episcopal hospitals, aged 73, died, April 20, of carcinoma of the colon

Cyrenus G Darling, Ann Arbor, Mich University of Michigan Medical School, Ann Arbor 1881 member and past president of the Michigan State Medical Society fellow of the American College of Surgeons formerly professor of surgery at his alma mater for four years acting dean of the dental college of the University of Michigan at one time mayor of Ann Arbor, for many years chief of staff at St. Joseph's Mercy Hospital, aged 77, died, April 21, of pernicious anemia

Henry Joseph Scherck ♂ St Louis Tulane University of Louisiana Medical Department, New Orleans, 1889, member of the American Urological Association, fellow of the American College of Surgeons, assistant professor of urology, St. Louis University School of Medicine aged 65, on the staffs of the Missouri Pacific Hospital St Louis City Hospital, Jewish Home for Chronic Invalids and the Jewish Hospital, where he died March 29 of heart disease.

Philip Webb Davis ♂ Portland Maine, Medical School of Maine, Portland, 1900, secretary of the Maine Medical Association, fellow of the American College of Surgeons served during the World War, for twenty-seven years member of the staff of the Maine General Hospital editor of the *Maine Medical Journal* aged 57 was drowned April 26 when the automobile which he was driving crashed through the wooden railing of a narrow bridge.

Alphonso David Rockwell, Flushing, N Y Bellevue Hospital Medical College New York, 1864, professor of electrotherapeutics, New York Post-Graduate School of Medicine, 1888-1892, past president of the American Electro-Therapeutic Association, Civil War veteran, neurologist and electrotherapist to the Flushing Hospital, 1904-1912 author of *Relation of Electricity to Medicine and Surgery*, and other works, aged 92, died, April 12

Nathan Sturges Jarvis, Major, U S Army retired, New York, Bellevue Hospital Medical College 1884 entered the army as an assistant surgeon in 1887 veteran of the Spanish-American War, was retired in 1901 for disability in pursuance of a special act of Congress returned to active duty in 1901 served during the World War retired as a major in 1930, aged 72, died, April 20, of angina pectoris

Winthrop Essex McGinley, New London, Conn, College of Physicians and Surgeons, Baltimore, 1914 member of the Connecticut State Medical Society, past president and secretary of the New London County Medical Society, served during the World War, on the staff of the Lawrence and Memorial Associated Hospitals, aged 47, died suddenly, April 27, in Waterford, of heart disease.

William Wertenbaker ♂ Wilmington, Del University of Virginia Department of Medicine, Charlottesville 1901, fellow of the American College of Surgeons, gynecologist and obstetrician to St. Francis and Wilmington General hospitals, gynecologist to the Delaware State Hospital, Farnhurst, consultant on the surgical staff of the Kent General Hospital, Dover, aged 57 died, March 24

Jere Williams Lord ♂ Baltimore, University of Pennsylvania School of Medicine, Philadelphia, 1887 for many years clinical professor of dermatology, Johns Hopkins University School of Medicine aged 69 on the staffs of the Johns Hopkins Hospital and the Union Memorial Hospital where he died, April 23, of diverticulitis, fecal fistula and abdominal abscess

Lon West Haynes, Detroit, University of Michigan Medical School, Ann Arbor, 1908, member of the Michigan State Medical Society, fellow of the American College of Surgeons, aged 49 on the staffs of the Receiving Hospital Herman Kiefer Hospital and the Harper Hospital, where he died, April 19, of coronary thrombosis

John J Rooks, Grand Rapids, Mich, Grand Rapids Medical College 1901, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902 member of the Michigan State Medical Society, on the staff of St. Mary's Hospital, aged 55, died suddenly, April 17, of coronary thrombosis

George W McAllister ♂ Hampton Va University College of Medicine, Richmond, 1899, fellow of the American College of Surgeons on the staff of the Hampton Training School for Nurses and Dixie Hospital, aged 56, died, March 30, of acute nephritis, paresis and therapeutic quartan malaria.

Edwin H Underwood ♂ Fort Wayne Ind, Hahnemann Medical College and Hospital, Chicago, 1905 served during the World War aged 61, on the staff of the Lutheran Hospital, where he died, April 3 of septicemia, following a slight wound from an instrument, incurred while treating a patient

James Fleming Musser, Calvin, Okla., Chicago College of Medicine and Surgery, 1912 member of the Oklahoma State Medical Association served during the World War aged 48, died, April 17, in a hospital at Holdenville, of injuries received when his automobile overturned.

Mae Lichtenwalner-Myers ♂ Philadelphia Woman's Medical College of Pennsylvania, Philadelphia, 1905 professor of histology and embryology at her alma mater, member of the American Association of Anatomists aged 50, died, April 28, in the Woman's Hospital of heart disease

Alexander H Stewart ♂ Lawton Okla., Medical College of Ohio, Cincinnati, 1882 president of the Comanche County Medical Society, veteran of the Spanish-American War, for merly member of the state legislature of Kentucky, aged 80, died, April 10 of cerebral hemorrhage.

William James Wolfe, Chatham N J, University of the City of New York Medical Department, 1884, member of the Medical Society of New Jersey, past president of the Morris County Medical Society formerly postmaster, aged 73, died, March 31, of pulmonary edema.

William Archibald Young, Toronto Ont, Canada Victoria University Medical Department, Coburg 1886 L.R.C.P. London 1887 for thirty-five years coroner for the city of Toronto editor of the *Canadian Journal of Medicine and Surgery* aged 66, died, April 1

William Bulger Johnson, Birmingham Ala, University of the South Medical Department, Sewanee, Tenn 1905, member of the Medical Association of the State of Alabama, aged 53 died suddenly, March 26, at Blount Springs, of chronic endocarditis and myocarditis

Harrison Murray Crittenden, Haverhill Mass, Tufts College Medical School, Boston, 1898, member of the Massachusetts Medical Society aged 58 on the staff of the General Stephen Henry Gale Hospital, where he died, April 5, of pulmonary embolism.

Benjamin Franklin Roller, Chicago, University of Pennsylvania School of Medicine, Philadelphia, 1902 member of the Medical Society of the State of New York, and the Illinois State Medical Society aged 56, died, April 20, in the Doctor's Hospital, of pneumonia

**Rayburn B Smith** ♂ Alma, Mich, Saginaw (Mich) Valley Medical College, 1903, formerly bank president and mayor of Alma for eight years president of the school board, aged 51, died, April 21, in the Saginaw General Hospital, of typhoid

**Valerian Albert Miller** ♂ Lake Arthur, La, Vanderbilt University School of Medicine Nashville, Tenn, 1895 past president of the Jeff-Davis Parish Medical Society for twelve years coroner of Davis Parish, aged 60, died, April 18, of heart disease.

**Eugene McDowell Trabue**, Louisville, Ky, University of Louisville School of Medicine, 1915, served during the World War, chief of the tuberculosis unit of the medical staff of the Veterans' Administration, aged 43, died, April 8, of heart disease

**Mendel Emmanuel Jonesoff**, New York, University of Paris Faculty of Medicine, Paris France, 1900, member of the Medical Society of the State of New York, aged 64, died, April 4 in the French Hospital of angina pectoris and arthritis

**James Philip Hatfield**, Wheat, Tenn Lincoln Memorial University Medical Department, Knoxville, 1912, member of the Tennessee State Medical Association, aged 50, died April 7, in Knoxville (Tenn) General Hospital, of cerebral hemorrhage

**Charles Hawkins Gilmour**, Toronto, Ont., Canada, University of Toronto Faculty of Medicine, 1903 fellow of the American College of Surgeons, served during the World War, on the staff of the Grace Hospital, aged 53, died, April 20

**Leverette Herbert Price**, Moncton, N B, Canada, Bellevue Hospital Medical College, 1892 member and past president of the Council of Physicians and Surgeons of New Brunswick, aged 65, died, March 1, in the City Hospital

**Arthur P Ginn**, Nebraska City Neb, University of Vermont College of Medicine, Burlington 1883, past president and secretary of the Otee County Medical Society, aged 71, died, April 4, in Los Angeles, of cerebral hemorrhage.

**Frank Peter Stedem**, Champaign, Ill, Eclectic Medical Institute, Cincinnati 1899 served during the World War, formerly mayor and member of the board of health of Saybrook, aged 68, died, April 14, of cerebral hemorrhage

**Emmett L Robinson**, Lincoln, Neb, College of Physicians and Surgeons, Keokuk, Iowa, 1878, also a pharmacist, formerly member and secretary of the school board of Central City, aged 82, died, April 9, of perforated gastric ulcer

**Wyman Smith**, Minneapolis Northwestern University Medical School Chicago, 1931, member of the Minnesota State Medical Association, aged 29 on the staff of St Barnabas Hospital, where he died, April 20, of septicemia

**Henry House Beers**, New York University of Vermont College of Medicine, Burlington, 1901 consulting ophthalmologist to the Rockaway Beach (N Y) Hospital, aged 57, died, April 23, of carcinoma of the left lung and liver

**Clyde F Johnson**, Seymour, Texas, Hospital College of Medicine Louisville, Ky, 1901 member of the State Medical Association of Texas, aged 63, on the staff of the Baylor County Hospital, where he died April 6, of peritonitis

**George M Waterhouse**, Weiser Idaho, Eclectic Medical Institute, Cincinnati, 1885, Barnes Medical College, St Louis, 1899, member of the Idaho State Medical Association, aged 72, died March 6, in St. Luke's Hospital, Boise.

**Frederick Church Jacobson**, Newark N J Medical Department of the University of the City of New York, 1894, member of the Medical Society of New Jersey aged 64 died, April 11, of carcinoma of the bladder and prostate

**Solomon Nathan Rosenbaum**, New York Medical Department of the University of the City of New York, 1895 member of the Medical Society of the State of New York, aged 73, died April 2, of cerebral thrombosis

**Joseph G Russell**, Salem N Y Hahnemann Medical College and Hospital Chicago 1879, aged 74 died April 10, in the Dover (N J) General Hospital of a skull fracture received when he was struck by an automobile.

**Charles B Dreher**, Tamaqua, Pa, Homeopathic Medical College of Pennsylvania, Philadelphia, 1867, for many years bank president and formerly secretary of the school board, aged 87 died April 7, of cerebral thrombosis

**Ignatz David Loewy**, Whipple, Ariz Jefferson Medical College of Philadelphia 1903 on the staff of the Veterans Administration Hospital aged 52 died April 10, of tuberculosis of the lungs and tumor of the brain

**Nathaniel Albert Nicholson**, Back Bay, Va, University College of Medicine, Richmond, 1901, member of the Medical

Society of Virginia, aged 52, died, April 3, in St Vincent's Hospital, Norfolk, of tumor of the brain

**Thomas Leiper Kane**, Chicago, School of Medicine of the Division of the Biological Sciences of the University of Chicago 1932, aged 29, died, April 13, in the Billings Memorial Hospital, of streptococcal meningitis

**John Joseph Smith**, Dallas, Texas Baylor University College of Medicine, Dallas 1916, member of the State Medical Association of Texas aged 56 died March 21, in a local hospital, of carcinoma of the thyroid.

**George Crofton Enright**, Yonkers, N Y University of Vermont College of Medicine, Burlington 1903 member of the Medical Society of the State of New York, aged 57, died, April 12, of cerebral hemorrhage.

**Samuel W Gadd**, Philadelphia University of Pennsylvania School of Medicine, Philadelphia 1885, member of the Medical Society of the State of Pennsylvania aged 74, died, April 10, of coronary thrombosis

**Charles Menzies Briggs**, Fairport N Y, University of Buffalo School of Medicine, 1880 member of the Medical Society of the State of New York, aged 77, died, April 3, in the Rochester General Hospital

**Milton Walton** ♂ Hastings Fla Memphis (Tenn) Hospital Medical College 1904, president of St Johns County Medical Society served during the World War aged 51, died, April 23, of heart disease

**John E Minney**, Altadena, Calif, Kansas City (Mo) Medical College, 1880 formerly dean and professor of ophthalmology and otology, Kansas Medical College, Topeka, aged 87, died, April 7, of pyonephrosis

**John Chisholm Breedlove**, Muldrow, Okla Washington University School of Medicine, St. Louis 1908 member of the Arkansas Medical Society, aged 49, died suddenly April 14, of heart disease

**George C Traugh** ♂ Donora, Pa, National Normal University College of Medicine Lebanon Ohio 1896 also a preacher and lawyer, aged 69, died suddenly, March 30, of acute myocarditis

**Nellie Florence Moore Hegardt**, Los Angeles College of Physicians and Surgeons, Los Angeles 1914 aged 63 died March 9, of sarcoma of the orbit, sternum and ribs and intestinal obstruction

**Percy F Houghton**, Brooklyn Georgetown University School of Medicine, Washington, D C, 1901 served during the World War aged 57, died, April 14, in St Catherine's Hospital, of goiter

**Charles John Loizeaux**, Des Moines, Iowa State University of Iowa College of Homeopathic Medicine, Iowa City, 1889, aged 84, died, April 1, of cerebral hemorrhage and arteriosclerosis

**George William Fegers**, Nebraska City, Neb Keokuk (Iowa) Medical College, 1896 member of the Nebraska State Medical Association, aged 59, died suddenly March 31, of angina pectoris

**James Madison Wellborn**, Rock Springs, Ga Chattanooga (Tenn) Medical College, 1893 served during the World War, aged 64, died, April 6, in the Erlanger Hospital Chattanooga

**Chauncey Centus Way**, Muskogee, Okla Chicago Homeopathic Medical College 1904, Hahnemann Medical College and Hospital, Chicago, 1905 aged 56, died February 6 of lobar pneumonia

**Robert Pearl Woods** ♂ Oak Hill W Va College of Physicians and Surgeons, Baltimore, 1913 medical superintendent of the Oak Hill Hospital, aged 47, died, April 16, of pneumonia

**Wilbur Mason Warner**, Middletown, Ohio Pulte Medical College, Cincinnati, 1897, member of the Ohio State Medical Association, aged 64, died, April 11 of carcinoma of the bladder

**Edward Grant May**, Toledo, Ohio, Northwestern Ohio Medical College Toledo, 1887 served during the World War aged 68 died April 8 in St. Vincent's Hospital of pneumonia

**Frederick Fobes Doggett**, Boston, Harvard University Medical School Boston 1880 member of the Massachusetts Medical Society, aged 78 died, April 13, of chronic nephritis

**John Copps Bowker**, Lawrence, Mass, Medical School of Maine Portland 1884, aged 71 died, April 20, at St Petersburg, Fla, of injuries received when he fell in a bath tub

**Emil Besser**, Remington, Ind, Chicago Homeopathic Medical College 1899, member of the Indiana State Medical Association, aged 65, died, April 14, of pneumonia

**Hugh Lownds Appleton**, Gadsden Ala., Vanderbilt University School of Medicine, Nashville, Tenn., 1892, aged 67, died, April 16, of pyemia and abscess of the lung

**John A. White** ♂ Indianapolis, University of Georgia Medical Department, Augusta, 1915 served during the World War, aged 44, died, April 9, of heart disease.

**Harvey J. Churchill**, Pekin Ill. National Homeopathic Medical College, Chicago 1893 aged 85, died, April 14 in Los Angeles, of complications resulting from a fall

**Walter C. Skiff** ♂ New Haven, Conn. New York Homeopathic Medical College 1883 aged 75 died, April 23, of coronary thrombosis, edema and myocarditis

**Charles A. Reed**, New Castle, Pa. Miami Medical College Cincinnati, 1885 member of the Medical Society of the State of Pennsylvania, aged 75, died, February 23

**Robert Allen Gamble**, Petersburg Va., St. Louis College of Physicians and Surgeons 1896 aged 59, was instantly killed, April 14, in an automobile accident.

**George Winters Herbern**, San Francisco, Jefferson Medical College of Philadelphia, 1902, aged 62 died, March 9, in St. John's Hospital, of pernicious anemia

**Horace Leon Cunningham** ♂ Amar, Ala., Vanderbilt University School of Medicine, Nashville, Tenn., 1910, aged 49 died, in April of coronary occlusion

**John Christian Martin**, Kansas City Mo., University of Louisville (Ky.) School of Medicine, 1897, aged 59 died April 11, of a self inflicted bullet wound

**Frank D. Bishop**, Monrovia, Calif. Cleveland University of Medicine and Surgery, 1894 aged 76, died, March 9, of carcinoma of the prostate and bladder

**Allan Holford Walker**, Toronto Ont. Canada Royal College of Physicians and Surgeons Kingston 1867, aged 87, died, February 23, of angina pectoris

**Aurelius L. Petree**, Greensboro N. C. College of Physicians and Surgeons, Baltimore 1886 aged 74, died April 16, of angina pectoris and myocarditis

**Wiley L. Whitehead**, Lake City S. C. Maryland Medical College Baltimore 1904, aged 59 died, March 31 of injuries received in an automobile accident.

**Joseph H. Close**, Topeka Kan. Rush Medical College Chicago 1894 aged 68 died, April 7, of carcinoma of the left kidney with metastasis

**Samuel King Carson**, Palo Alto Calif. Ohio Medical University, Columbus 1898, aged 68, died, March 17 of carcinoma of the bladder

**Frederick L. Tupper** ♂ Flint, Mich. Michigan College of Medicine and Surgery, Detroit, 1894, aged 74, died April 21 of heart disease.

**Helen B. Bodelson**, Rock Island Ill. Woman's Hospital Medical College Chicago 1878 aged 91, died, April 13, of bronchopneumonia

**Charles Foley**, Dearborn Mich. Detroit College of Medicine, 1891, aged 85, died, April 10, of coronary thrombosis and myocarditis

**William Ledmon Allen**, Oakland Calif. University of Buffalo School of Medicine, 1878, aged 86, died, March 28 of heart disease.

**George W. Weyl**, Pasadena Calif., Eclectic Medical Institute Cincinnati, 1889, aged 66, died suddenly April 15, of heart disease.

**Mary Parks Putnam**, Los Angeles College of Physicians and Surgeons, Boston, 1894 aged 91 died March 7, of chronic myocarditis

**George Edens**, Danville Ill. Hahnemann Medical College and Hospital, Chicago, 1879, aged 81, died, April 17, of cerebral softening

**D. Harvard Irwin**, Marcellus Mich. Michigan College of Medicine and Surgery, Detroit, 1904, aged 64, died, March 12

**Edgar T. Behymer**, Batavia Ohio Eclectic Medical Institute, Cincinnati, 1881 aged 78, died, April 20 of uremia

**W. A. Kimbrough**, Haskell Texas Louisville (Ky.) Medical College, 1894, aged 60 died April 3, of heart disease.

**David G. Stewart**, Ironton Ohio, Columbus Medical College 1891, aged 76 died, March 9, of diabetes mellitus

**Charles P. Felshaw**, Holly Mich., Detroit Medical College, 1877, aged 92, died April 8, of bronchitis

**Irene Salgo**, New York, University of Szeged, Hungary, 1923 aged 35 died, April 8 of epilepsy

**Goodson Cox**, Mount Ida Ark. (licensed Arkansas, 1903), aged 87, died, February 23, of senility

## Bureau of Investigation

### MISBRANDED "PATENT MEDICINES"

#### Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[Editorial Note The abstracts that follow are given in the briefest possible form (1) the name of the product (2) the name of the manufacturer, shipper or consigner, (3) the composition, (4) the type of nostrum, (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product]

**Teaco Ointment**.—White & Kleppinger Inc. Chicago. Composition Ointment with petroleum base containing methyl salicylate camphor menthol and a trace of boric acid. Cure all. Fraudulent therapeutic claims.—[N J 17832 June 1931]

**Pastillas de Compuesta Mitchellia**.—Dr. J. H. Dye Buffalo N. Y. Composition Extracts of plant drugs including resins and volatile oils coated with starch sugar and calcium carbonate. For female disorders. Fraudulent therapeutic claims.—[N J 17834 June 1931]

**Welch's Sweet Lilly**.—A. J. Welch New Orleans. Composition An ointment with a petrolatum and paraffin base containing camphor and peppermint oil. For croup lagrippe pneumonia coughs asthma piles and toothache. Fraudulent therapeutic claims.—[N J 17837 June 1931]

**Calliente Oil**.—International Drug Sales Co. Denver. Composition Methyl salicylate camphor extracts of plant drugs including capsicum chloroform alcohol (47 per cent) and water. Cure all. Fraudulent therapeutic claims.—[N J 17838 June 1931]

**Cerolactol Antiseptic Ointment**.—Hibbs Worth Laboratories Inc. Chicago. Composition An ointment essentially of petrolatum and paraffin, with tar zinc oxide sulphur and traces of cerium and phosphorus compounds. For eczema etc. Fraudulent therapeutic claims.—[N J 17840 June 1931]

**Cerolactol Internal Antiseptic Tablets**.—Hibbs Worth Laboratories, Inc. Chicago. Composition Charcoal phenolphthalein with a small amount of a cerium compound starch and peppermint oil coated with sugar and starch. For stomach disorders etc. Fraudulent therapeutic claims.—[N J 17840 June 1931]

**Cerolactol Germicide and Prophylactic**.—Hibbs Worth Laboratories Inc. Chicago. Composition Boric acid menthol thymol phenol salicylic acid a trace of a cerium compound glycerin alcohol and water. For mouth and throat affections. Fraudulent therapeutic claims.—[N J 17840 June 1931]

**Taylor's Bromo Aspirin**.—Taylor Medicine Co. Tampa Fla. Composition Acetylsalicylic acid (aspirin) and caffeine but no bromine nor bromide. For fevers lagrippe rheumatism etc. Fraudulent therapeutic claims.—[N J 17844 June 1931]

**Sniff**.—M. R. Cady & Co. Grand Rapids Mich. Composition Mustard and turpentine oils camphor and menthol alcohol (63.2 per cent) and water. For hay fever asthma etc. Fraudulent therapeutic claims.—[N J 17846 June 1931]

**Aceto Balm**.—A. C. Clark & Co. Inc. Brattleboro Vt. Composition Ointment with petrolatum base containing zinc oxide boric acid and a trace of pine needle oil. For antiseptic uses. Fraudulent therapeutic claims.—[N J 17847 June 1931]

**Bering Ear Oil**.—Henry Heide and Sons, St. Paul Minn. Composition Essentially a bland oil with a small amount of methyl salicylate. For ear troubles. Fraudulent therapeutic claims.—[N J 17850 June 1931]

**Dr. Pusheck's Cold Push**.—Pusheck Health Laboratories Chicago. Composition Acetanilid (15 grains per tablet) camphor and small amounts of quinine coated with iron oxide and starch. For fevers influenza etc. Fraudulent therapeutic claims.—[N J 17851 June 1931]

**Kelp Ine**.—Kelp Ine Products Corporation of America Seattle. Composition Essentially a potassium soap without iodine and iodides. For skin infections etc. Fraudulent therapeutic claims.—[N J 17852 June 1931]

**Torpedo Volatex**.—W. C. Belmonte New York. Composition Volatile oils including menthol camphor and eucalyptol. For nasal and throat troubles. Fraudulent therapeutic claims.—[N J 17853 June 1931]

**Hydes Rheumatic and Kidney Remedy**.—Hyde Remedy Co. Meridian Miss. Composition Sodium salicylate potassium iodide citrates alcohol (3.85 per cent) sugar and water. For rheumatism and kidney diseases. Fraudulent therapeutic claims.—[N J 17856 June 1931]

**Cuticura Pills**.—Potter Drug and Chemical Corp. Valden Mass. Composition Quinine sulphate iron carbonate red pepper nuxvomica alkaloids iodides and aloin. For indigestion etc. Fraudulent therapeutic claims.—[N J 17858 June 1931]

**Amogen Tablets**.—Amogen Co. San Antonio Texas. Composition Calomel and extracts of plant drugs including a laxative drug and a mydriatic. General cure-all. Fraudulent therapeutic claims.—[N J 17859 June 1931]

**Coloni Compound**—Coloni Laboratories St Louis Mo Composition Extracts of plant drugs including valerian with alcohol (17.6 per cent) glycerin and water For female weakness etc. Fraudulent therapeutic claims.—[N J 17861 June 1931]

**Radumac**—Radumac Mineral Co Los Angeles Composition Water solution of the sulphates of aluminum iron calcium magnesium and sodium with sulphuric acid General cure all Fraudulent therapeutic claims.—[N J 17862 June 1931]

**Garrett's Constitutional Virginia Dare Wine Tonic**—Fruit Industries Ltd New York Composition The red variety contained alcohol (over 22 per cent) sodium glycerophosphate, nitrogenous matter a bitter a reducing sugar and water The white variety contained the same ingredients but in slightly different proportions For tonic purposes Fraudulent therapeutic claims.—[N J 17863 June 1931]

**Chloro Zel**—American Drug & Chemical Co Minneapolis Composition Chloramine. For sore throat pyorrhea female troubles etc. Fraudulent therapeutic claims.—[N J 17864 June 1931]

**Tetremidy**—Eucaline Medicine Co Dallas Texas Composition Acetic acid glycerin and water dyed pink For skin diseases Fraudulent therapeutic claims.—[N J 17865 June 1931]

**Dr Whitehall's Rheumatic Remedy**—McCullough Drug Co Cincinnati Ohio Composition Acetanilid sodium salicylate sugar starch and talc For rheumatism etc. Fraudulent therapeutic claims.—[V J 17866 June 1931]

**Athlophoros Searles Remedy for Rheumatism**—Athlophoros Co Pomfret Center Conn Composition Sodium salicylate, volatile oils including cassia and peppermint with methyl salicylate glycerin and water For rheumatism etc. Fraudulent therapeutic claims.—[V J 17869 June 1931]

**Allen's Ulcerine Salve**—J P Allen Medicine Co St Paul Minn Composition Essentially a lead soap and linseed oil For ulcers etc. Fraudulent therapeutic claims.—[N J 17870 June 1931]

**Marshall's Prepared Cubebs Cigarettes**—James B Horner Inc New York Composition Essentially powdered stem and fruit tissue of cubebs For asthma etc. Fraudulent therapeutic claims.—[N J 17873 June 1931]

**Prescription No 3913**—C H Platt New York Composition Potassium iodide colchicine extracts of plant drugs including sarsaparilla with alcohol sugar and water flavored with sassafras oil For rheumatism etc. Fraudulent therapeutic claims.—[N J 17907 June 1931]

**Ru Co**—Clyde Collins Chemical Co Inc Memphis Composition Essentially epsom salt Glauber's salt and small quantities of saccharin citric acid and tartaric acid For rheumatism etc. Fraudulent therapeutic claims.—[N J 17905 June 1931]

**Grimault's Syrup of Hypophosphite of Lime**—E Fougere & Company Inc New York Composition Essentially calcium hypophosphite morphine hydrochloride ( $\frac{1}{16}$  grain per fluid ounce) sugar and water For pulmonary troubles etc. Fraudulent therapeutic claims.—[N J 17904 June 1931]

**Hubbel's Formula**—Hubbel Products Corporation Boston Composition Essentially alcohol (57.6 per cent) chloral hydrate volatile oils including camphor eucalyptol and clove oil with formaldehyde acetic and sulphuric acids small quantities of extracts of plant drugs and water For pyorrhea etc. Fraudulent therapeutic claims.—[N J 17905 June 1931]

**Jenkins Rheumatic Remedy**—I W Jenkins Youngstown Ohio Composition Essentially salicylic acid potassium iodide small quantities of extracts of plant drugs glycerin alcohol sugar and water flavored with sassafras oil For rheumatism etc. Fraudulent therapeutic claims.—[N J 17906 June 1931]

**McCormick's Freesine Salve**—McCormick & Co Baltimore Composition Ointment with a petrolatum base containing menthol camphor eucalyptus and cinnamon oils For pneumonia etc. Fraudulent therapeutic claims.—[N J 17908 June 1931]

**Galpin's Antiseptic Vaginal Suppositories**—H T Galpin Inc Amityville N Y Composition Essentially boric acid a quinine compound and ammonia alum in a base of cocoa butter For female disorders. Fraudulent therapeutic claims.—[N J 17914 June 1931]

**Wampole's Extracto de Hgado de Bacalao (Wampole's Cod Liver Extract)**—Henry H. Wampole & Co Inc Philadelphia Composition Cod liver extract wild cherry malt extract (diastatic) hypophosphites of calcium sodium potassium manganese iron pyrophosphate sulphates of quinine and strychnine with aromatics General cure all Fraudulent therapeutic claims.—[N J 17915 June 1931]

**Ducro's Alimentary Elixir**—Yglesias & Co Inc New York Composition Essentially meat extract sugar alcohol (18 per cent) and water For nervous troubles etc. Fraudulent therapeutic claims.—[N J 17916 June 1931]

**Hydroleline**—Century National Chemical Co Paterson N J Composition Cod liver oil salicylic acid alcohol pancreatin and water For consumption rheumatism etc. Fraudulent therapeutic claims.—[N J 17920 June 1931]

**Jarabe Fenico**—Caribou Laboratories Aguadilla Puerto Rico Composition Essentially carbolic acid glycerin sugar and water For asthma etc. Fraudulent therapeutic claims.—[N J 17925 June 1931]

**Jarabe Hipofosfito de Cal**—Caribou Laboratories Aguadilla Puerto Rico Composition Essentially calcium hypophosphite sugar and water For nervous troubles etc. Fraudulent therapeutic claims.—[N J 17923 June 1931]

**Lanman & Kemp's Pure Cod Liver Oil and Cod Oil Black**—Lanman & Kemp Inc New York Composition The Pure Cod Liver Oil consisted simply of cod liver oil the Cod Oil Black consisted of rancid dark-colored cod liver oil For consumption rheumatism etc. Fraudulent therapeutic claims.—[V J 17924 June 1931]

**Vial's Phenic Syrup**—Charles L Hursing & Co New York Composition Carbolic acid morphine hydrochloride (0.072 grain per fluid ounce) sugar and water For bronchial trouble etc. Fraudulent therapeutic claims.—[N J 17925 June 1931]

**Crao Terpina Wampole**—Yglesias & Co Inc New York Composition Essentially creosote terpin hydrate glycerophosphates a trace of chloroform alcohol and water For bronchial troubles etc. Fraudulent therapeutic claims.—[N J 17929 June 1931]

**Bentonite**—Bentonite Co Albuquerque N M Composition Insoluble matter (clay) with extracts of plant drugs including buchu a laxative drug a bitter drug and glycerin alcohol and water peppermint flavored General cure all Fraudulent therapeutic claims.—[V J 17931 June 1931]

**Amoules Galarsine Ducatte**—E Fougere & Co New York Composition Essentially guaiacol cacodylic acid strychnine sulphate and water For lagrippe. Fraudulent therapeutic claims.—[V J 17937 June 1931]

**Pactil Colberg**—Drug Co of Puerto Rico Inc San Juan Puerto Rico Composition Essentially codeine phosphate creosote compounds of sodium and potassium bromides glycerophosphates citrates sugar and water For bronchial troubles etc. Fraudulent therapeutic claims.—[N J 17935 June 1931]

## Correspondence

### 'HOW TO BUDGET HEALTH'

*To the Editor*—Several misstatements appear in the review of 'How to Budget Health' in THE JOURNAL, April 1

The reviewer says that the methods used to recruit members [of medical guilds] are by paid advertisements by direct mail promotion and by personal solicitation—methods that are contrary to recognized ethical ideas

I specifically opposed the use of paid advertisements in promoting medical guilds. This form of promotion the book states, 'is most vulnerable on ethical grounds and should probably not be resorted to' (p 194). The only direct mail promotion advocated is in the form of announcements sent to their patients by doctors who join the staff of a guild, or announcements of the adoption of the guild plan by an existing medical institution (p 195). As for personal solicitation the only kind advocated in the book is by the word of mouth of satisfied patrons 'who would naturally, without any stimulation by the officers of the guild tell their friends about it' (p 195).

The reviewer says 'It is stated that these guilds would not be able to meet expenses and that it would be necessary to have some kind philanthropist subsidize the guilds in order that they may be able to pay the running expenses. As a matter of fact the whole argument of the book is in favor of complete self-support

It is stated that the membership fees should be set at a conservative figure which would meet all expected operating and overhead costs (p 223) and again 'The guild is to be completely self-supporting' (p 225). It was recognized however, that in order to insure the members of a guild staff against loss it would be necessary to have an adequate financial guaranty of continuous operation for at least three and possibly five years (p 223). A guaranty which might never be called for is different from a 'subsidy' which implies continued assistance.

Finally, your reviewer states that 'Mr Clark says that it [the guild plan] was found to be illegal in New York State' and that 'the scheme would probably come under the laws governing insurance agencies'. The text of the book is in direct contradiction to these assertions. Chapter 7 demonstrates in detail that medical guilds would be legal in New York State under the membership corporations law if organized as hospital corporations or 'partnerships' (p 194). It is furthermore pointed out in the same chapter that medical

guilds set up in the state of New York would not be considered insurance agencies. They would not, therefore, be subject to the jurisdiction of the insurance laws and the agencies set up to administer them' (p 187)

EVANS CLARK New York.

Director, Twentieth Century Fund, Inc.

## PERMANENT ENLARGEMENT OF THE LIPS AND FACE

To the Editor—Some comments seem to be needed on the paper 'Permanent Enlargement of the Lips and Face Secondary to Recurring Swellings and Associated with Facial Paralysis A Clinical Entity,' by New and Kirch (*THE JOURNAL*, April 22, p 1230). The authors say that "The condition is apparently a clinical entity, but we have been able to find only slight mention of it in the literature."

The condition is a clinical entity which has been recognized for fifty years and repeatedly described. It was first described by Jonathan Hutchinson in the *Medical Times and Gazette* (14, 1883). It was again considered by him in the *Illustrated Medical News* (Oct 20, 1888, p 82) and in the *Archives of Surgery*, London (4, plate LXVI, 1893). It has also been described by Weaver and Tunncliffe (*J Infect Dis* 5:569 [Dec. 18] 1908), by Bourgeois and Egger (*Rev hebdomadaire*, May 22 1909, p 611), by Adam (*Brit M J* 2:933 [Oct. 2] 1909), in Fox, Allbutt and Rolleston's *System* (1911, vol IX, p 183) by Mackenzie (*Brit J Dermat* 8:138, 1896), by Foster (*J Cutan Dis* 27:72, 1909), by Pollitzer (*ibid*, p 176) and by me (*Arch f Dermat u Syph* 111:41, 1912). It is commonly referred to briefly in current works on dermatology. Sutton, MacLeod and Ormsby in their textbooks—the first three that I took up—all refer to it. Ormsby gives it a brief but adequate consideration as an independent clinical entity in the group of erysipelas-like infections.



Solid edema of face (From Hutchinson's Archives of Surgery)

The pictures given in the New and Kirch article are typical of the illustrations that appear in various accounts of the condition. This is well shown by the illustration from Hutchinson's *Archives of Surgery*, reproduced herewith, which was published forty years ago. Hutchinson's comment on these two cases was as follows:

This plate shows the portraits of two women who were the subjects of that form of solid oedema which not unfrequently occurs as a result of repeated attacks of an erysipelas swelling of the face.

I have published on different occasions a considerable number of examples of this malady. The usual history is that the patient has been liable for years to recurring attacks of erysipelas transitory in duration and limited to the face but attended with very considerable oedema. The final condition is one allied to Elephantiasis. The disease is wholly local.

That is still essentially the whole story. The condition is not excessively rare in dermatologic practice. I find eight cases in my private records and have certainly seen as many more. I have seen a new case within two weeks. From my cases duplicates could be selected of almost every case that New and Kirch illustrated.



Solid edema of face. (From Hutchinson's Archives of Surgery)

They say that "the question of lymphangitis or recurring erysipelas can be excluded." How, they do not explain. They briefly refer to their biopsies, saying "Nothing was found other than edematous tissue containing lymphocytes. After the patient had received repeated treatments, biopsy disclosed fibrous and inflammatory changes in the tissues, as would be expected." Others have found these fibrous and inflammatory changes as they expected in cases which have not been treated, and they are the sort of histologic changes that occur with chronic cellulitis.

From the days of Hutchinson's original description to the present, the condition has been associated in the minds of observers with recurrent attacks of erysipelas or lymphangitis, which caused lymphatic obstruction and secondary proliferation of fibrous tissue, exactly analogous to the process that occurs in elephantiasis. Many authors, in fact, consider it under elephantiasis. Sutton, for example refers only to elephantiasis of the face and gives an illustration of elephantiasis of the upper lip which is a characteristic picture of the condition affecting the lip.

My first case was in a Negro boy and, as would be expected from the notorious tendency of Negroes to connective tissue overgrowth, was an extreme example involving the whole face. In him it was associated with recurrent attacks for many years of frank erysipelas with the systemic and local characteristic symptoms of erysipelas. This is frequently so. For many years I thought the condition was usually associated with frank outbreaks of lymphangitis or cellulitis. Several of my later cases, however, have given no history of typical attacks of erysipelas but have simply had recurrent attacks of swelling. This, of course, does not exclude either lymphangitis or cellulitis of the cheek. In the soft tissues of the lips and cheeks an inflammatory reaction can occur which is manifested only by swelling. I have within a week seen a cellulitis of the cheek without elevation of temperature, pain or even any redness,

simply a dense swelling of the deep structures of the cheek, which runs an acute course and quickly subsides

MacLeod, in fact, describes this condition under "recurrent erysipelas without constitutional symptoms," which may occur 'where the tissues are lax, as about the eyelids,' and shows as 'a definite swelling in which the redness is comparatively little marked, hence the name white erysipelas (Unna)'

Cases which have been examined histologically bear out this interpretation of the condition

New and Kirch do call attention to an important new complication that is facial paralysis I have not recently thoroughly reviewed the literature, but as far as my memory goes that has not hitherto been recorded as a complication For it they offer no explanation It would seem to be explainable as a possible complication of chronic inflammatory process invading a nerve traversing the tissues in which this process occurs and producing sufficient destruction of nerve tissue to cause interference with function

New and Kirch report that the results of treatment of the condition have been satisfactory Adam has reported two cases in which the result of antiseptic treatment has been cure, and others, with treatment based on the same principle, have occasionally reported successful results In the experience of most observers, treatment has been unsatisfactory As a rule after the enlargement of the tissues has been established for a considerable time, treatment has not been satisfactory In this the analogy to elephantiasis is exact

WILLIAM ALLEN PUSEY, M D, Chicago

### NEPHROPEXY

To the Editor—In THE JOURNAL, April 15, page 1167, is an article entitled "Nephropexy by Means of a Fascial Hammock," by David R. Melen, M D, of Rochester, N Y This procedure is reported as a new method of accomplishing nephropexy In the *Urologic and Cutaneous Review* (34 679 [Oct.] 1930) was published my article on 'Nephropexy by Fascial Transplant,' in which I reported several cases of fascia lata as a hammock suspended from the twelfth rib My patients were relieved of symptoms and the later roentgenograms showed good position of the kidney Dr Melen used a slightly different technic in attaching the fascia to the kidney, but the method is essentially the same as mine

CLARENCE EMERSON, M D, Lincoln Neb

[This letter was referred to Dr Melen, who replies as follows]

To the Editor—I looked up the article mentioned. It is a fine method. I overlooked it in my references

I am not in favor of the use of autofascia from the patient's thigh, as it makes an additional operation, and the fascia is absorbable.

I like the animal fascia better as it is nonabsorbable.

I am not in favor of cutting the intercostal muscle free from the twelfth rib, as it is time consuming is unnecessary, and adds the risk of accidental pneumothorax in cases in which the pleura extends lower than normal

Dr Emerson's method preceded mine It is not his fault that I did not know about it, and he should be given credit for priority

I make no claim to newness or priority Dr O S Fowler used fascia as early as 1913, from the thigh, as Dr Emerson does (Fowler, O S Ureteral Obstruction Causing Urinary Stasis A New Etiology in Kidney Stones, with a New Method of Nephropexy to Secure Ideal Natural Drainage, THE JOURNAL, Jan 31, 1914, p 367) My method is different.

DAVID R MELEN, M D, Rochester, N Y

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

### ARSPHENAMINE IN NEUROSYPHILIS

To the Editor—What is the latest and most accepted theory relative to the lack of curative power of arsphenamine in neurosyphilis? Please omit name

M D New York

ANSWER.—The negative statement of this question would give the impression that arsphenamine has no curative powers in neurosyphilis Much must of course, depend on the aspect of neurosyphilis under consideration but it may be definitely stated that the arsphenamines do have curative powers in neurosyphilis and that unquestionably, as evidenced by the currently appearing clinical studies of the American Cooperative Clinical Group working with the United States Public Health Service in which early neurosyphilis at least is shown to be definitely responsive in a proportion of cases amounting approximately to 75 per cent of the whole to routine treatment with the arsphenamines and heavy metals The observations of Bruusgaard and of Ravaut are now being widely quoted as evidence that even the spontaneous evolution of a syphilitic infection leads to recovery from some degrees of neurosyphilitic involvement irrespective of treatment so that this factor must modify any overenthusiasm that might be expressed for the influence of the arsphenamines in standard practice The question has been repeatedly raised by serious students as to whether the arsphenamines have a positively injurious or predisposing effect on the course and development of neurosyphilis This question is extensively reviewed in most recent textbooks and reference may be had also to Guy's address before the Section on Dermatology and Syphilology (THE JOURNAL, Oct 4 1930 p 979) and a study by O'Leary and Rogin dealing particularly with this point (*Proc Staff Meet Mayo Clin* 7 273 [May 11] 1932) In general, it is now accepted that the adequate use of the arsphenamines in the treatment of syphilis does not predispose to neurosyphilitic involvement, though it is coincidentally powerless to prevent it in certain evidently predisposed cases The inadequate use of arsphenamines, on the other hand definitely predisposes to neurosyphilitic forms of relapse especially in early syphilis, and the same statement may be made though with less definiteness on patients treated with the arsphenamines without adequate support from the heavy metals, bismuth and mercury This type of relapse, known as neurorecurrence, was in the early days of arsphenamine treatment responsible for much of the prejudice that developed against the use of the drug because of its alleged tendency to precipitate neurosyphilitic accidents

In the treatment of late neurosyphilis other than dementia paralytica the good effect of the arsphenamines, given particularly in so-called tonic or moderate dosage, is now unquestioned Symptomatic relief from lightning pains in tabes, improvement in ataxia, and the rapid clearing up of many of the minor symptoms of cerebrospinal and tabetic neurosyphilis under arsphenamine therapy alone are now established beyond dispute. It has even been a question whether much of the effect of intraspinal therapy and of spinal drainage, now gradually losing popularity was not due to the beneficial therapeutic action of moderate doses of neoarsphenamine administered in preparation for the intrathecal injection of the arsphenaminized serum, or the drainage of the fluid

In dementia paralytica the arsphenamines are now recognized as virtually powerless Even under the most intensive form of administration they lead to only temporary improvement and short remissions, and no attempt should be made to substitute them except as purely preparatory treatment, for the vastly more effective arsenical trypanamide and for malarial therapy in properly selected cases In the clinically resistant gastric crises and primary optic atrophy the arsphenamines are not effective, and primary optic atrophy, of all the localized forms of neurosyphilis, has presented the strongest case against the use of this drug On the other hand the most recently reported results by More in the intraspinal therapy of primary optic atrophy again tend to support the belief in the effectiveness of this drug by a suitable route of administration

It must be recalled also that a certain amount of prejudice against the use of arsphenamines in neurosyphilis has undoubtedly arisen from the employment of too large doses without adequate heavy metal preparation in patients with acute neurosyphilitic processes The effect of such a misuse of these drugs

is to produce focal flare ups, frequently with disastrous consequences or damage, which is quite unnecessary when the technic of dosage and of preliminary heavy metal preparation, as described in recent textbooks, is properly understood

#### THE HEART TICKLER OR PACEMAKER

To the Editor—Can you give me any information concerning the heart tickler as developed by Dr. Albert S. Hyman? In the magazine *Time* it is described as an electric gold needle. I am physician for a coal mining company and was much interested in this article. If you can send to me any information concerning this or any other method used to revive the heart after it has received severe electrical shock I will greatly appreciate it.

A. R. CLAUSER, M.D., Madrid, N. M.

ANSWER.—The article that appeared in *Time* as well as in many newspapers was a popularized account of a report published in the *Archives of Internal Medicine* (50:283 [Aug.] 1932), on the resuscitation of the stopped heart by intracardial therapy, which described the experimental use of an artificial pacemaker. This paper, written by Dr. Albert S. Hyman, was one of a series of reports made in a six year study at the Witkin Foundation for the Study and Prevention of Heart Disease, Beth David Hospital, New York, concerning the problems associated with restoring automatic cardiac activity after standstill of the heart.

In a previous paper (*Arch. Int. Med.* 46:553 [Oct.] 1930) Dr. Hyman developed the theory that resuscitation of the stopped heart by intracardial injection was due entirely to the prick of the injected needle rather than to the pharmacodynamic action of the substance injected. The action of epinephrine, strophanthin, strychnine and eleven other substances in a series of animal experiments was shown to be secondary and of minor importance in restoring the normal cardiac cycle. Physiologic experiments demonstrated that for several minutes after complete cardiac arrest certain well established electrochemical phenomena are developed. As the myocardium becomes anoxic there is a rise in the acid component values of the delicately balanced ratio maintained in the normal electrolytic state of the heart muscle. This change is accompanied by increased irritability of all myocardial fibers as well as an increase in electrical conductivity of muscle segments. Any mechanical stimulus may at this time be sufficient to give rise to an ectopic focus for myocardial contraction, pinching, squeezing or thumping on the heart are age-old methods of resuscitation. The extrasystole that arises may be sufficient to initiate coronary circulatory movement with an immediate reduction of the altered chemical balance.

When intracardial injection is made, the prick of the needle serves to create an irritable point from which ectopic contractions are readily developed. The injured heart muscle immediately develops an action current, which temporarily assumes the role of the electrical activity of the pacemaker, so that an extrasystolic rhythm develops. When the injection has been made into the ventricles this extrasystolic arrhythmia may rapidly develop into a paroxysmal ventricular tachycardia and finally into ventricular fibrillation with cardiac arrest again.

Hyman pointed out that if the injection is made in the right auricle such types of arrhythmia will have a far less hazardous outcome, for paroxysmal auricular extrasystolic tachycardia, which subsequently becomes auricular fibrillation is not incompatible with life since the latter condition is a well known and easily managed clinical entity.

The theory and practicability of intra-auricular puncture of the stopped heart was discussed in the editorial columns of *THE JOURNAL* May 30 1931 page 1875 and subsequently in the correspondence columns of *THE JOURNAL*, July 11, 1931, page 124 and Aug. 8, 1931, page 408.

The recent contribution of Dr. Hyman and his associates at the Witkin Foundation, an abstract of which appeared in *THE JOURNAL*, Nov. 26 1932 page 1887, has been the substitution of the needle prick theory in reactivating the stopped heart by an electromechanical device which simulates the pacemaker current. Instead of injecting the usual hollow needle into the right auricle of the heart, a special needle electrode containing an insulated conductor passing through the center of the needle shaft and terminating at the tip, is used. When this needle, which is the same size as the ordinary injecting needle is placed in the auricular musculature, a tiny electric current (about 1 millivolt) is sent through the needle and forms an irritable arc measuring about 1 mm in the myocardial muscle. This arc becomes an irritable point from which an ectopic beat is produced.

Since the number of electrical impulses can be controlled and since only one application of the needle is required, the automatic activity of the heart may be maintained by this ingenious apparatus which has been called the artificial pacemaker. With the ectopic beat arising in the auricle, the stimulus for con-

traction passes over the normal pathways of the heart and a normal cardiac cycle results. The apparatus itself is a spring motor controlled generator especially constructed to deliver a current of 1 millivolt at the needle point. The current is interrupted by a polyphasic rotating disk which permits 30, 60 or 120 beats per minute to be delivered. The device is a self-contained unit of simple construction and any physician who has had occasion to perform an intracardial injection for the restoration of the stopped heart will be able to use it without difficulty. The apparatus is manufactured by the Siemens-Halske (German General Electric) Corporation and will soon be ready for general distribution to hospitals and emergency stations throughout the country.

This method of resuscitating the stopped heart is especially valuable in those cases classified by Hyman as Group I, in which the heart, though normal, has been stopped by shock, electrocution or trauma. When the apparatus has been used soon enough, a favorable outcome has been found in more than half of the cases reported. So far as accidental electrocution is concerned Hooker and his associates in Baltimore have shown that death occurs from ventricular fibrillation. If there has been no injury to the central nervous system, Hyman has demonstrated that cardiac arrest which follows such fibrillation may respond to stimuli from the artificial pacemaker.

#### ACTIVE IMMUNIZATION BEFORE TERMINATION OF PASSIVE IMMUNITY

To the Editor—I cannot agree with your answer to Dr. Daly (*THE JOURNAL* January 21 p. 211) that there seems to be no good reason why active immunization should not be started before termination of the period of passive immunity. The free antitoxin of the injected diphtheria serum neutralizes part or all of the toxin contained in the toxin antitoxin or toxoid and so the forming of antibodies will be delayed or prevented. For the same reason a diphtheria patient who is treated with serum at the beginning of his illness can be cured and still have a positive Schick reaction so that he should be actively immunized after his illness (*Aldershoff Nederl. tijdschr. v. geneesk.* Oct. 27 1928). For this reason I regard as justified the hunch of Dr. Daly that it may be immunologically unsound to proceed at once with active immunization against diphtheria before the termination of the period of passive immunization.

CORNELIS SCHAGEN, M.D., Oakland, Calif.

ANSWER.—As the question stated that it was desirable to obtain an active immunization as soon as possible owing to the local prevalence of the disease, the answer was formulated with the needs of the practical situation in mind. Now, passive immunity begins to fall off at once after the injection of the antitoxic serum. It grows less effective day by day. As ordinarily induced it is said to last only for three or four weeks. There is no way of telling precisely when it no longer is protective, or detectable except by repeated Schick tests. To begin active immunization before the termination of the passive immunity will not do any harm, it might be of benefit in starting active immune reactions just as soon as the passive immunity no longer protects. From the practical point of view there is nothing immunologically unsound in beginning active immunization before the termination of passive immunity.

#### X-RAY TECHNIC IN ACNE VULGARIS

To the Editor—Please give me the best x-ray technic for treating acne vulgaris.

L. A. CROWELL, M.D., Lincoln, N. C.

ANSWER.—Unfiltered x-rays, one-fourth skin unit (about 80 roentgens) each week. For the face, the treatment should be applied to each side of the face. It should not be applied to the front of the face. If the disease affects the chest and back, treatment may be applied to these parts. If so, the face must be protected while the chest is being treated, and vice versa. The maximum number of treatments is sixteen. All the details of this technic with indications and contraindications are contained in MacKee's book "X-Rays and Radium in the Treatment of Diseases of the Skin" Philadelphia, Lee & Febiger, 1927.

#### SALTY TASTE IN MOUTH OF DIABETIC PATIENT

To the Editor—I have under my care a patient who has mild diabetes with a hypertension controlled with a low carbohydrate diet. She does not use insulin and is sugar free in 75 per cent of the specimens. She has a salty taste in her mouth which is persistent. I would appreciate help with this problem. Please omit name.

M.D., Connecticut

ANSWER.—It is possible that the salty taste is not due in any way either to the disease or to the diet. One would want to be sure that there was no pathologic condition in the throat, accessory sinuses of the nose, or the teeth, also, that no medicine is being given. If nothing is found in these investigations it might be wise to ascertain the nature of the gastric secretion.

## FISTULA IN ANO IN TUBERCULOSIS

To the Editor —1 Is the following diagnosis justifiable? 2 What is the latest opinion regarding tuberculosis being the cause of fistulae in ano? Section shows smooth muscle and fibrous connective tissue with a small piece of squamous epithelium attached. A few mucous glands are found. The tissue shows many foci of lymphocytes and endothelial cells with an occasional giant cell of the Langhans type. One focal area shows lymphocyte and endothelial cells in the periphery with a giant cell in the center. Acid fast stains do not reveal any acid fast bacilli. The diagnosis was tuberculosis of rectal fistula. 3 Will you also give me your opinion about the following: I sometimes see a selective pulmonary collapse that is the collapse of a lobe of a lung which is explained by the plugging with mucus of the bronchus leading to this lobe. The roentgenogram shows pneumothorax with selective collapse. Massive collapse of the lung following abdominal surgery is attributed to the same cause. The roentgenogram does not show true collapse in the same sense but it shows airless lung shall we say atelectasis and the entire lung field is blotted out. In view of the foregoing is it feasible to give the same explanation to the two pictures? For example if the upper lobe of one lung is found plastered against the mediastinum can this be explained by plugging of the bronchus supplying this lobe? If so how has the relative negative pressure inside the pleural cavity been reduced to allow collapse of this lobe without the collapse of the remainder of the lung? If it is explained by absorption of the air in the alveoli why does not the postoperative massive collapse give the picture of a pneumothorax instead of that of airless lung (or atelectasis)? Please omit name.

M D Louisiana

ANSWER—1 Yes, the diagnosis is most probably correct. The cellular complex is entirely compatible with tuberculosis. Acid fast bacilli are sometimes difficult to find in such lesions.

2 Fistula in ano in tuberculous individuals is almost always a tuberculous process. Various investigators have found definite evidence of tuberculous pathologic change in over 75 per cent of such specimens, when serial sections have been made and carefully studied (Fansler, W. A. *Journal-Lancet* 47: 269 [June 15] 1927; Martin, C. L., Chicago Municipal Tuberculosis Sanitarium). No doubt all but a trivial minority of the other 25 per cent are also tuberculous, either primarily or secondarily infested with tubercle bacilli. There is no reason, however, why a nonspecific anal lesion may not occur in tuberculous subjects but the opinion and evidence at present, seem to indicate that practically all anal fistulas in tuberculous persons are tuberculous or ultimately become tuberculous. In nontuberculous persons, or in persons without active tuberculous disease, however most anal fistulas are considered nontuberculous. Figures from the Mayo Clinic and other reliable authorities give only about 3 to 5 per cent tuberculous in such cases. There are many chemical, bacterial and mechanical injuries that may involve this vulnerable part of the anatomy which are definitely not tuberculous. Although it has not been demonstrated it is conceivable that all anal fistulas may be nonspecific at the beginning, but in tuberculous individuals they become secondarily infected by the constant stream of tubercle bacilli that pass over them. The incidence of such fistulas is about 3 to 7 per cent of tuberculous persons, while the nontuberculous persons have about a hundred times less. A point of difference may be that in the nontuberculous, many small early lesions heal. Only the large lesions persist and become infected with nonspecific bacteria, while in the illnourished tuberculous patient the small early lesions soon become tuberculous, after which they heal with difficulty, if ever.

3 The questions on lung collapse are much more involved. The cases mentioned cannot be considered at all as parallel phenomena. Some are rather well understood and others little. The first type of collapse spoken of seems to be the best understood, i. e. the kind so frequently encountered in tuberculosis or following influenzal pneumonia. It is found most frequently in the right upper lobe. Here there is an antecedent pathologic process that involves a certain pulmonary region, causing the closure of a main stem bronchus perhaps by tenacious mucus, which may (in tuberculosis) rapidly become fibrocaseous. The pulmonary tissue then become airless, leaving a partially collapsed lobe with irregular areas of involvement by the disease. Soon the intervening collapsed tissue becomes soggy with serofibrinous exudate, to be followed by an invasion of monocytes, lymphocytes fibroblasts and finally, fibrosis. Within a period of from four to six months this fibrous tissue contracts, 'plastering' the lobe against the mediastinum. Now, a pneumothorax early in this process will greatly speed it up and produce selective collapse at its best. It is not all collapse however but partially contraction.

This is no doubt the condition that Leon Bernard (Les débuts et les arrêts de la tuberculose pulmonaire. Paris Masson & Cie, 1932) has called 'lobite'. In spite of the fact that Bernard reports a favorable prognosis in nearly all these cases, they may and frequently do caseate excavate and spread.

It is not to be taken for granted however that all selective collapse can be explained on this basis. There is no reason

why it may not occur from the same causes as massive collapse, an entirely different and poorly understood clinical entity.

The first complete study of massive collapse was made by William Pasteur in 1890 (*Internat J M Sc* 100: 242, 1890) and on irregularly to his last report in 1914, first on diphtheria paralysis, then on operative cases. Pasteur was the first to suggest an active massive collapse 'in contradistinction to passive collapse. By active collapse' he meant a failure of active respiratory power, in contradistinction to the plugging of a bronchus. Since then a large number of authors have experimented and theorized about the matter, till at present the information may be summarized about as follows. Obstruction of a lobe bronchus by a complete obstruction (artificial plug or tenacious mucus) will lead to a complete collapse, owing to solution of the trapped air into the blood stream, if the blood stream remains intact (Lichtheim, *L Arch f exper Path u Pharmacol* 10: 54, 1878, 1879). The collapse is centripetal from the obstruction and is not complete in lobular obstruction because of the intercommunication of Kohnsche pores (Van Allen, C. M. and Adams, W. E. *Surg Gynec & Obst* 50: 385 [Feb] 1930). In human disease the cause is thought to be tenacious mucus. This mucus plug theory has been supported by Elliott and Dingley (*Lancet* 1: 1305, 1914), Jackson and Lee (*Tr Am S A* 43: 723, 1925), Coryllos and Birnbaum (*Arch Surg* 16: 501 [Feb] 1928) and others, but some facts cannot be explained on this basis alone because Pasteur and Rose Bradford (*Quart J Med* 12: 127 [Oct] 1918) have reported postmortem examinations in which no such plugs were ever found. The latter asserts also that in many patients there is no clinical evidence of them. Furthermore, massive collapse is most often sudden, while the plugged bronchus leads to a gradual collapse. Another theory is that there is a reflex spasm of the bronchioles as in asthma (Bradford *Quart J Med Sante*, L. R. *Radiology* 4: 221 [March] 1925, and others). Sante reasoned that there must be something in addition to simple collapse because a pneumothorax lung is transparent on roentgen examination, while the collapsed lung is solid. It must be realized, however that the 'artificial' pneumothorax lung is never entirely airless, while the other usually is. A spontaneous pneumothorax lung, notwithstanding, may be airless. Another theory proposes (Briscoe *J C Quart J Med* 13: 293 [April] 1920) a weakening of the diaphragm by inflammation another attributes it to poor posture. But none explain all the phenomena. J. M. W. Morison of Edinburgh suggests that one must look on the lungs as a dynamic muscular organ as described by C. C. Macklin (*Physiol Rev* 9: 1 [Jan] 1929) functioning rhythmically in peristaltic-like waves in expiration. The action is regulated by the sympathetic and vagus nerves—the former to relax, the latter to contract. (A precedent for such a spastic condition is afforded in asthma.) An interference with the vagus would overrelax the bronchi permitting an accumulation of mucus (which may be dry or become sticky in a dehydrated person). As the sympathetic stimulation wears off, the vagus may again reassert itself and cause spasm—and a completion of the collapse.

Irrespective of the merits of this theory, it is the only one proposed that will explain all the facts. There seems little doubt now that there may be two types of massive collapse as suggested first by Pasteur an active and a passive. Recently the whole field of collapse has been ably treated by Ernest Fletcher (*Tubercle* 14: 3 [Oct] 1932). This author confines atelectasis to the unexpanded lungs of infants—the lobar and lobular—sometimes leading to congenital bronchiectasis and cystic lung respectively apneumatosi to the simple airless lung due to simple plugging of a bronchus comparable to 'passive collapse' detelektasis (a new term) involving the sudden massive 'active' collapse and the slow type due to diseased lung tissue, and finally, pneumothorax.

MAZOPLASIA WITH PAINFUL ENGORGEMENT  
OF BREASTS

To the Editor —I have a patient aged 37 the mother of two normal children who were nursed during infancy. The patient weighs 150 pounds (68 Kg) and is 5 feet 6 inches (167 cm) in height. She complains of pains and engorgement of both breasts with no relationship to the menses these symptoms persisting sometimes for a month at a time. An examination of the breasts reveals that they are normal with regard to masses there is no increased tenderness and the nipples are normal. The patient is not pregnant her youngest child is 12 years of age. Kindly advise probable diagnosis and treatment. Please omit name. M D, Illinois.

ANSWER—The condition described is a physiologic one to which Sir Lenthal Cheatle has given the name 'mazoplasia'. The breasts enlarge because of a hyperplasia of the epithelial and connective tissue elements. There is desquamation of epithelial cells in the ducts and acini accompanied by hyper-

plasia of the pericanalicular and periacinous connective tissue, and frequently also new acini are formed. The epithelium that is shed accumulates in and distends the ducts and acini, producing generalized pain and often nodules throughout the breast.

In the normally menstruating women, changes are constantly taking place in the breasts as the result of stimulation by hormones circulating in the blood. Most women do not recognize any unusual changes associated with the menses, but some complain of pain and tenderness in one or both breasts. Frequently an enlargement of the breasts is observed. In typical cases the pain begins from ten to fifteen days before the menstrual flow and diminishes or disappears when the flow of blood begins. In some cases as the one cited in the query, the pain is not associated with the menstrual cycle, and it is generally more pronounced in one breast than in the other. The breasts are usually somewhat tender and the glands feel more solid than usual.

Cutler (THE JOURNAL, April 11 1931, p 1201) has thoroughly discussed the question of painful breasts and recommends ovarian residue to overcome the pain. This therapy is based on the belief that painful breasts are associated with excessive formation of corpus luteum. The administration of ovarian residue apparently tends to cause a cessation of the abnormal epithelial and connective tissue hyperplasia by counteracting the excessive corpus luteum secretion thus diminishing or removing its influence on the breasts. In a certain number of women after the use of ovarian residue the breasts soften and the painful nodules disappear. Cutler suggests that patients be given 5 grains (0.3 Gm) of ovarian residue three times a day, beginning fifteen days before the menstrual period starts and continue taking this amount until the flow begins. Women who are not benefited much by this dosage should take an additional 5 grains daily beginning with the menstrual flow and continuing until fifteen days before the next expected flow, from which time they again take 15 grains daily. If the menstrual flow becomes excessive, the amount of ovarian residue should be reduced.

#### NO GONORRHEAL URETHRAL DISCHARGE

To the Editor—I have a patient a man aged 29 who ten years ago had a painless urethral discharge. He consulted a physician who examined a smear and told him it was not gonorrhea and to forget about it. The discharge ceased in about two weeks. Three years ago after an interval of seven years he commenced again to have discharge although very small in amount. He has consulted a number of physicians who have examined his prostate and have taken smears and they all told him they did not know what it was due to. My examination revealed a normal sized gland with a normal feel to the touch and a small amount of fluid was expressed on massage. A smear showed over 20 pus cells per high power field but no organisms. The patient insists on knowing the cause of his infection. Can you state an opinion? Also can you advise any treatment besides prostatic massage which he is getting at present which will help clear up the infection? Please omit name.

M.D. Massachusetts.

ANSWER.—An aseptic purulent discharge from the urethra is as a rule secondary to chronic congestion of the prostate and seminal vesicles. It is often difficult to trace the original cause of these conditions. In some instances this syndrome in the male corresponds to endocervicitis in the female partner brought about by the use of occlusive pessaries especially if they are made out of rubber. Irrigations of the anterior urethra as a rule aggravate the condition. The application of medical diathermy to the penile urethra and prostate and seminal vesicles is quite successful. Massage at intervals of the prostate and seminal vesicles is also indicated. It has to be kept in mind that successful evacuation of the seminal vesicles can be accomplished only by the use of a club-shaped instrument constructed for this purpose.

#### CORRECTIVE MEASURES IN CROSS EYES

To the Editor—I should like to have your opinion as to how soon corrective measures should be started on a child's eyes that do not sometimes focus properly. This child is 13 months old and it is only in the past two weeks that the condition has been noticeable. At times the accommodation seems quite normal but at other times she may look definitely cross eyed. I should also like to know what can be done. Please omit name.

M.D. Illinois

ANSWER.—Not infrequently are children under the age of 12 months more or less cross-eyed principally because central visual acuity has not yet been developed to the full extent and because fusion has not yet taken place. In the majority of such cases, parallelism develops spontaneously and attention is not required. But if the strabismus persists, the child should receive ophthalmologic attention as soon as possible. Refraction under full atropine cycloplegia should be performed and the existing errors of refraction corrected. If the vision is

manifestly lower in one eye than the other, part time occlusion of the good eye should be practiced. As soon as the child is able to cooperate, orthoptic training exercises should be started with the aim of developing fusion as early as possible. In resistant cases it is the practice of today to operate between the age of 3 and 5 years, provided at least eighteen months orthoptic training has shown that the strabismus cannot be corrected by nonsurgical means.

#### ILLUMINATING GAS AND ABORTION

To the Editor—A woman aged 30 who has had two normal pregnancies the last one being four years ago became pregnant in July 1932. During her first trimester she complained of malaise and indefinite complaints, such as headaches, nervousness and mild gastro-intestinal symptoms which were quite different from those present in the average case of pregnancy. The physical and laboratory results were negative. In October 1932 she had a spontaneous abortion from which she recovered without complications except for the continuance of the indefinite complaints mentioned. It later developed that during her entire period of pregnancy she was living in a house in which there was a rotted gas pipe and that she and her family were exposed to the inhalation of undetermined amounts of illuminating gas. Her husband who gave a history of chronic peptic ulcers was also affected by the return of his gastric symptoms more or less continued during his occupancy of this dwelling. I should like to know the possible effect of inhalation of small quantities of illuminating gas over a period of three months on the course of pregnancy, the possibility of its being the cause of the miscarriage and its effect on a patient with chronic peptic ulcers. Could a child of 6 living in the same house entirely escape from the effects of the gas while the adults became affected? Please omit name and address. I would appreciate inclusion of references.

M.D. Missouri

ANSWER.—The inhalation of illuminating gas over a long period of time sufficient to produce a certain degree of poisoning can lead to an abortion. Williams (Obstetrics, ed 6 1930 p 762) in discussing the etiology of abortion, says that "poisoning with phosphorus, lead, illuminating gas and other substances may lead to similar results" (death of the fetus and its subsequent expulsion from the uterus). De Lee (Obstetrics ed 5 1928, p 451) in his discussion on the maternal causes of abortion, says that the sudden rise of temperature may stimulate the uterus to action as also may the hypercarbonization of the blood in those diseases which are attended by cyanosis. Stockard (Am J Anat 28 115 [Jan] 1921) found that a temporary reduction in the oxygen supply of the environment may lead to death of the embryo.

Illuminating gas is poisonous chiefly because of the carbon monoxide which it contains and the most frequent source of carbon monoxide poisoning is illuminating gas, which contains from 4 to 16 per cent of carbon monoxide in coal gas and from 30 to 40 per cent in water gas. Usually there is a certain degree of safety in the odor of illuminating gas, but a leaky gas main may be the source of the gas, which may lose its odor by filtration through the ground and find its way into apartments some distance from the source of the leak.

Carbon monoxide has a pronounced affinity for the hemoglobin of the blood displacing molecule for molecule the oxygen which is combined in the form of oxyhemoglobin, thus preventing the normal oxygen-carrying power of the blood and causing the tissues to suffer for want of oxygen (anoxemia).

Webster (Legal Medicine and Toxicology, 1930, p 550), in a comprehensive article on this subject says "In the home the sources of CO are many and are ordinarily disregarded by most individuals. Many of us are constantly subjected to the possibility of absorbing carbon monoxide which may arise from leaky gas fittings, incomplete combustion of carbonaceous matter in stoves, grates, furnaces, leaky rubber tubing used to connect gas heaters, etc."

The symptoms of chronic poisoning from illuminating gas vary with the time of exposure and the degree of concentration. They include progressive fatigue, muscular weakness, head ache, dulness and mental depression, disturbed vision, a peculiar transient ashy pallor which may change to a more or less greenish pallor, red patches on the cheek bones, palpitation of the heart, nausea, vomiting, vertigo, slowing of the pulse and dyspnea.

From the foregoing statements it appears that both the miscarriage in the wife and the return of the gastric symptoms in the husband may readily have been due to chronic poisoning from illuminating gas. The escape of the child from the effects of the gas is not easy to explain unless the child spent the greater part of each day in the open air outside the home and therefore was not exposed much to the gas. Henderson and Haggard (Noxious Gases 1907 p 106) say "When two individuals one of whom is much larger than the other, or when an adult and a child, both at rest are exposed to the same atmosphere, it is the smaller and younger individual with the more active metabolism who absorbs carbon monoxide and

tends to approach saturation the more rapidly Small individuals therefore succumb to carbon monoxide more rapidly than large individuals for the volume of their respiration is greater in relation to their volume of blood' Webster says

While there is little difference in susceptibility of the two sexes to the action of such gases as carbon monoxide, yet the female, being somewhat more accustomed to breathe the vitiated air of the house, has possibly a slightly greater resistance to its action"

#### PSYLLIUM SEED—LIQUID PETROLATUM—SEDATIVES IN HEART DISEASE

To the Editor —1 Recently in reply to an inquiry you spoke of Psylla as an irritant I thought it was taken only as added bulk. What becomes of the mucilaginous covering? 2 What harm if any is there in taking liquid petrolatum orally? 3 What analgesic is safe to use in a patient with myocarditis whose heart is being sustained with daily doses of digitalis? I fear the barbiturates, though practically all the pharmaceutical houses have a special formula which they declare has a wide margin of safety Please omit name. M D California

ANSWER—1 Psyllium may irritate by mechanical action, especially by forming masses, when it is not taken with a sufficient amount of water. It is best to take it well stirred in a glassful of water, and to drink a tumblerful of water afterward to prevent the possibility of lump formation. The mucilage remains largely undigested and appears in the stools, and is responsible for part of the laxative action

2 None unless it is taken in excessive dosage, when it is liable to 'leak' out of the anus

3 Codeine (0.03 Gm.) is safe in such a patient and efficient, especially when combined with amidopyrine (0.30 Gm)

#### ACCIDENTAL SWALLOWING OF DOBELL'S SOLUTION AND OF HYDROGEN PEROXIDE

To the Editor —What is the treatment—if any is needed—of the accidental swallowing of (1) three fourths of a glass of Dobell's solution (about 5 to 6 ounces) (2) from one half to a glassful of 3 per cent hydrogen peroxide? (3) Please give immediate treatment—if any should be indicated—and treatment from twelve to twenty four hours after ingestion Please do not publish my name M D Missouri

ANSWER—1 If the patient took as much as 200 cc of Dobell's solution he would have ingested 3 Gm each of sodium borate and sodium bicarbonate and 0.6 Gm of phenol. As none of these exceed a possibly therapeutic dose, no treatment would be needed.

2 Such a dose is liable to produce considerable irritation of the gastric mucosa, its degree depending on the emptiness or fullness of the stomach

3 As the solution is rather acid, its irritant action may be lessened by the immediate administration of sodium bicarbonate. If emesis has not occurred vomiting might be induced or the stomach tube employed. The treatment of the subsequent gastritis would demand the use of a bland, smooth diet, such as milk and cereal gruels

#### RELIEF OF TRAUMATIC EPILEPSY AFTER WITHDRAWAL OF SPINAL FLUID

To the Editor —I recently heard a statement to the effect that the mere withdrawal of about 75 cc of spinal fluid and the replacement of the fluid with air to make an encephalogram would be likely to cause a permanent cessation of generalized periodic convulsions (traumatic epilepsy) in an adult whose attacks started six years after a supposed skull fracture. Is there any scientific support for such a statement? Is this view generally accepted? Is this procedure a diagnostic or therapeutic one? Please omit name city and state M D

ANSWER—It will be recalled that, when it became common practice to make encephalograms in cases of old head injury, it was found that some of the patients experienced relief from their previously almost constant headache after this procedure. Similarly, there have been cases of narcolepsy and of traumatic epilepsy with the similar result of more or less relief after the taking of an encephalogram. The method can only be considered a diagnostic one in cases of epilepsy, but in suggesting the procedure to patients and their relatives it is permissible to say that there may perhaps be some direct benefit as well

#### EFFECTS OF EPHEDRINE ON BLOOD SUGAR

To the Editor —Some months ago in an editorial you said that epinephrine throws sugar. Will the use of ephedrine do the same? Please omit name M D Illinois

ANSWER—Ephedrine has a tendency to increase the percentage of blood sugar acting similarly to epinephrine by increasing glycogenolysis in the liver

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The general oral clinical and pathological examination will be held in Milwaukee June 13 Sec. Dr. Paul Titus 1015 Highland Bldg Pittsburgh

AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee June 12 Sec. Dr. W. P. Wherry 1500 Medical Arts Bldg Omaha

CALIFORNIA Reciprocity San Francisco June 14 Sec. Dr. Charles B. Pinkham 420 State Office Bldg Sacramento

COLORADO Denver July 58 Sec. Dr. Wm. Whitridge Williams 422 State Office Bldg Denver

CONNECTICUT Basic Science Prerequisite to license examination New Haven June 10 Address State Board of Healing Arts 1895 Yale Station New Haven

DELAWARE Wilmington June 13 15 Sec. Dr. Harold L. Springer 1013 Washington St Wilmington

DISTRICT OF COLUMBIA Basic Science Washington June 29 30 Regular Washington July 10 11 Sec. Dr. W. C. Fowler 203 District Bldg Washington

FLORIDA Jacksonville June 12 13 Sec. Dr. William M. Rowlett Box 786 Tampa

GEORGIA Atlanta June 14-16 Joint Sec. Mr. R. C. Coleman 111 State Capitol Atlanta

ILLINOIS Chicago June 27 30 Supt. of Regis. Mr. Paul B. Johnson State House, Springfield

INDIANA Indianapolis June 20 22 Sec. Dr. William R. Davidson 413 State House, Indianapolis

IOWA Iowa City June 6-8 Dir. Mr. H. W. Crede Capitol Bldg Des Moines

KANSAS Kansas City June 20 21 Sec. Dr. C. H. Ewing Larned

KENTUCKY Louisville June 7 Sec. Dr. A. T. McCormack, 532 W. Main St Louisville

MAINE Augusta July 5 6 Sec. Dr. Adam P. Leighton Jr 192 State St Portland

MARYLAND Regular Baltimore June 20-23 Sec. Dr. Henry M. Fitzhugh 1211 Cathedral St Baltimore. Homeopathic Baltimore June 20 21 Sec. Dr. John A. Evans 612 W. 40th St Baltimore

MINNESOTA Basic Science Minneapolis June 6-7 Sec. Dr. J. C. McKinley 126 Millard Hall University of Minnesota Minneapolis Regular Minneapolis June 20 22 Sec. Dr. E. J. Engberg 350 St. Peter St. St. Paul

MISSOURI St. Louis June 7 9 Address State Board of Health Capitol Bldg Jefferson City

NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II The examinations will be held at centers where there are five or more candidates June 26 28 and Sept 13 15 Ex. Sec. Mr. Everett S. Elwood 225 S. 15th St. Philadelphia

NEBRASKA Omaha June 7 9 Dir. Bureau of Examining Boards Mrs. Clark Perkins State House, Lincoln

NEW JERSEY Trenton June 20-21 Sec. Dr. James J. McCuire 1101 Trenton Trust Bldg Trenton

NEW YORK Albany Buffalo New York and Syracuse June 26 29 Chief Professional Examinations Bureau Mr. Herbert J. Hamilton Room 315 Education Bldg Albany

NORTH CAROLINA Raleigh June 19 Sec. Dr. B. J. Lawrence 503 Professional Bldg Raleigh

NORTH DAKOTA Grand Forks July 5 8 Sec. Dr. G. M. Williamson 4 1/2 S. 3rd St. Grand Forks

OHIO Columbus June 6 9 Sec. Dr. H. M. Platter 21 W. Broad St Columbus

OREGON Portland July 4 6 Sec. Dr. Joseph F. Wood 509 Selling Bldg Portland

RHODE ISLAND Providence July 6 7 Dir. Dr. Lester A. Round 319 State Office Bldg Providence

SOUTH CAROLINA Columbia June 27 Sec. Dr. A. Earle Boozer 505 Saluda Ave Columbia

TEXAS Galveston June 20 22 Sec. Dr. T. J. Crowe 918 19 20 Mercantile Bldg Dallas

UTAH Salt Lake City June 28 29 Dir. Mr. S. W. Golding 326 State Capitol Bldg Salt Lake City

VERMONT Burlington June 21 23 Sec. Dr. W. Scott Nay Underhill

VIRGINIA Richmond June 21 23 Sec. Dr. J. W. Preston 803 Medical Arts Bldg Roanoke

WISCONSIN Basic Science Milwaukee June 17 Sec. Prof. Robert N. Bauer 3414 W. Wisconsin Ave. Milwaukee Regular Milwaukee June 27 29 Sec. Dr. Robert E. Flynn 401 Main St La Crosse

WYOMING Cheyenne June 5 Sec. Dr. W. H. Hassel Capitol Bldg Cheyenne

### National Board of Medical Examiners

The National Board of Medical Examiners reports that its certificate was awarded to 105 candidates who passed the final examination held in Boston Chicago and New York in January, 1933. The following colleges were represented

College	Year Grad
Yale University School of Medicine	(1929) (1930) (1931) 2)
Northwestern University Medical School	(1932) (1933) 2)
Rush Medical College	(1929) (1932) 4)
University of Illinois College of Medicine	(1932)
Johns Hopkins University School of Medicine	(1927) (1931)
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931)
Boston University School of Medicine	(1930) (1931) 3)
Harvard University Medical School	(1929 4) (1930 4) (1931 9) (1932)
Tufts College Medical School	(1930 2) (1931 9)
University of Michigan Medical School	(1930) (1931)

University of Minnesota Medical School	(1932 3)
St Louis University School of Medicine	(1931)
Washington University School of Medicine	(1930) (1931 3)
University of Nebraska College of Medicine	(1931)
Albany Medical College	(1931 3)
Columbia University College of Phys and Surgs	(1930 7) (1931 13)
Cornell University Medical College	(1926) (1930 2) (1931 5)
Syracuse University College of Medicine	(1931)
University of Buffalo School of Medicine	(1931)
Jefferson Medical College of Philadelphia	(1931)
University of Pittsburgh School of Medicine	(1931)
Woman's Medical College of Pennsylvania	(1931)
University of Vermont College of Medicine	(1931)
University of Toronto Faculty of Medicine	(1930 3)
McGill University Faculty of Medicine	(1930 2) (1931)
Licentiate of the Royal College of Physicians London and	
Member of the Royal College of Surgeons England	(1924)
Kongelige Frederiks Universitets Medisinske Fakultet, Norway	(1922)

### Utah Reciprocity Report

Mr S W Golding, director, Department of Registration, reports 7 physicians licensed by reciprocity with other states and 1 physician licensed by endorsement, Jan 16, 1933. The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
State University of Iowa College of Medicine		(1931)	Iowa
University of Louisville School of Medicine		(1925)	Kentucky
Columbia University College of Physicians and Surgeons		(1927)	New York
University of Oregon Medical School		(1929)	Washington
University of Pennsylvania School of Medicine		(1928)	Pennia
Medical College of the State of South Carolina		(1928)	S Carolina
Memphis Hospital Medical College		(1903)	Mississippi
College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Woman's Medical College of Pennsylvania		(1930)	N B M Ex

### Book Notices

**Clinical Physiology of the Eye** By Francis Heed Adler M A M D F A C S Instructor in Physiology and Ophthalmology Medical School University of Pennsylvania Cloth Price \$6.00 Pp 406 with 92 illustrations New York Macmillan Company 1933

The need of a book, especially in English on the physiology of the eye has been apparent for many years as none of the textbooks on ophthalmology, with the exception of the recent volume by Duke-Elder, have paid attention to this subject. The author is a physiologist as well as a practitioner of ophthalmology. In the introduction it is stated that there has been no attempt to make an exhaustive treatise, but that by giving, in as simple terms as possible, the fundamental facts and generally accepted theories of how the eye functions an outline for study and a guide to the literature are furnished. It is natural that the author gives more attention to those subjects concerning which he has made personal contributions but it may be said that items of greatest importance are stressed and these subjects are treated in a way that even one without technical scientific training may read with much pleasure. The functions of the eye are considered in a more or less logical sequence, beginning with the protective mechanism externally and concluding with the optic nerve posteriorly, discussions on the external ocular muscles, the aqueous and the intra-ocular tension are reserved for the final chapters. A critical survey reveals certain statements worthy of mention. Fischer's experiments on the permeability of the cornea are cited as gospel, although they have not been corroborated. Heterochromia iridis is said to be due to a lesion of the cervical sympathetic ganglion. The superior colliculi are designated as the way station for the pupillomotor fibers en route to the third nerve nuclei. The action of drugs on the iris musculature is treated briefly. No mention is made concerning chromasia of the optic nerve. The work of Baurmann with the ultramicroscope is not discussed in the chapters on the lens or vitreous. Those peculiar entoptic phenomena, which patients often inquire about, are made readily explainable. The influence of orthoptic exercises on the extra-ocular muscles and the retinal function is treated lightly, and Worth's conception of the fusion center does not explain entirely the reason for amblyopia and squint. The work of Poliak on the visual paths of the cerebral cortex is not mentioned. The drawings, charts and pictures, some original, are well produced and descriptive. An excellent departure from the ordinary bibliography appended to each chapter is the inclusion not only of the concrete references used

in the text but also an extensive compilation of the pertinent literature. The type is large and a generous index concludes the volume. The author has accomplished his aim in a clear and concise manner, bringing to the student, the biochemist, the psychologist, the general physician, the physiologist, the neurologist and the ophthalmologist the first textbook limited to this subject and its extensive literature. It will readily find its place for those having any interest in the clinical physiology of the eye.

**Hookworm Infection** By Clayton Lane M D Lieut Colonel Indian Medical Service (Retd.) Cloth Price \$6.25 Pp 319 with 36 illustrations New York & London Oxford University Press 1932

Hookworm disease has been widely used of late as a vehicle for carrying forward the propaganda for public health measures and for illustrating the significance of preventive medicine. Dr Charles Wardell Stiles, recently retired from the United States Bureau of Public Health, fittingly writes the foreword to this scholarly and incisive treatise. He closes this introduction, in which he emphasizes the slowness of progress in the mastery of this infection, with the terse sentence "Civilization was not made in a day." His plea is for health workers "to utilize to its full potentiality the church organizations and the school machinery of the world in the work of educating the masses to a higher conception of health and to the suppression of disease."

Colonel Lane's treatise is thoroughly interesting for many reasons. He incorporates in it the latest information in many-sided aspects of this thoroughly investigated field, he has well thought out opinions of his own on a number of significant features; and he expresses forcibly his criticisms of others and reinforces his own views with both facts and polemic arguments that excite admiration, if not always acquiescence.

The book is a splendid example of well considered public health work. It is well balanced in selection of material for inclusion, the author is critical alike of the significance of all conclusions presented by others, and of his own methods and results and, in all aspects of this many faceted subject, he keeps clearly in the foreground not only accurate and comprehensive scientific knowledge of hookworms and their relations to their hosts but also the control and ultimate elimination of hookworm disease.

The book opens with a succinct account of both sexes of the adult hookworms of man, *Necator americanus*, *Ancylostoma duodenale* and *A. braziliense* supplemented by a brief discussion of their valid names, host, habitats, geographic distribution and biology. Much attention is given to the extracorporeal life of the eggs and larval stages of these parasites. Eggs if not hatched live only three months. The conclusion is reached that infective larvae will live long enough to carry on infection from year to year. He criticizes Augustine's conclusion that the infective larvae die in the soil in Puerto Rico in from six to eight weeks. His results are interpreted as due to local dilution by migration rather than by death. Hookworm campaigns based on the acceptance of Augustine's conclusions are therefore liable to failure. Lane's own trapping experiments are cited in proof of the extent and significance of the migrating instinct or tropisms of the infective larvae.

These larvae live an aquatic life in the moisture around particles of earth. They can grow to the infective stage in the soil with as low a moisture content as 84 per cent. Development is suspended at 55 F, and death probably ensues at 21 F. Growth to infectivity is suspended at 104 F. Oxygen is necessary for development. Anaerobic conditions in the septic tank hasten their death. Larvae prior to the infective stage feed on aerobic bacteria such as *Bacillus coli*. Hydrogen ion concentration is most favorable at 7, and the limit of development is marked more sharply on the acid side than on the alkaline. Decomposition by anaerobiosis or hyperacidity destroys larvae. Light is deleterious to larvae, and gentle heat activates the infective stage.

Infestation through the skin is prevalent in the tropics and is the more primitive, but Lane is convinced from experiments that the oral route can also be utilized. However, in such cases the infective larval stage leaves the alimentary canal and follows the same route through the blood stream (rather than lymph) to the right heart, lungs, trachea, esophagus and stomach, to the small intestine, as does the worm entering by the cutaneous route.

The chapter on the pathologic damage induced by larval and adult worms is quoted and is the least satisfactory one in the book.

Much emphasis is laid on the value of an accurate method not merely of diagnosing the presence of hookworm in the patient, but of determining the weight of the infestation and of being able to detect light infestation. Obviously these are aspects essential not so much for diagnosis and treatment as for accurate knowledge of pathologic consequences, efficacy of therapeutic measures and exact evidence of the results of hookworm campaigns. To these ends Lane has rejected all methods of his predecessors and has devised the D C F, or direct centrifugal flotation method for mass control work, and the D C F F, the previous method pushed to finality, for critical control in the detection of ova in stools. An exhaustive and critical account of all methods is given in extenso only to conclude that "it is not possible from egg counts however exactly made, to deduce with any approach to accuracy the number of worms which a person harbours. To attempt it by inaccurate counting methods is surely futile."

The clinical symptoms and other ill effects of hookworm infestation are rather fully presented, and the varying opinions regarding the medical importance of the minor and fluctuating symptoms with which this chronic infestation is associated are reviewed.

Lane is very critical of those who believe that light, or even the lightest, infestations are negligible, and who would set a mathematical limit in numbers of worms, say 100 or even 25, which a child can harbor with impunity. The D C F F procedure gives "promise of determining, by the single factor control of disinfestation of simple hookworm infections, the extent to which the lightest infections are accompanied by detriment to the individual host. There is no justification for the confident assumption that they are personally immaterial."

Lane states that tissue immunity is marked in man except in the jejunum and ileum. Age immunity to the dog hookworm can be demonstrated in dogs but is as yet undemonstrated in man. He also holds that the reputed racial immunity of the Negro is unproved by the methods used.

The treatment for hookworm is discussed critically both as to the various anthelmintics used and as to the methods of determining their effects on the infection by Necator and Ancylostoma. "No obvious success has attended efforts to obtain, by combining drugs, a heightened parasitocidal effect with lessened toxicity to man, occasionally the reverse seems evident. Tetrachloroethylene has its fatal dose still undiscovered and shows no advance in efficiency over carbon tetrachloride. The latter is habitually given in quantity twice as great as the fatal dose. In such high doses it displays a potency not obviously greater than that of oil of chenopodium, while in amounts less than the minimum lethal dose it seems to have no claim to a place among efficient anthelmintics. Its record of cure and death lends no justification at all to any suggestion that it should be the great exception to the humane rule of medicine, namely that the medicinal dose must be markedly lower than the fatal dose. Oil of chenopodium depends on ascaridole for its toxicity to both man and hookworm, the doses fatal to man and hookworm seem to overlap. The drug should be withheld unless the ascaridole content of the sample used is known and when given it must be dispensed with unflinching accuracy seeing how small an error may carry the dose over the narrow borderline between safety and possible catastrophe. The efficiency of thymol is clearly wrapped up in participation. On all the exact evidence which has been obtained and marshaled, *particulated* thymol is the drug of election for the individual, or for the mass treatment of hookworm infection. Some of the energy hitherto dissipated in the search for and testing of new anthelmintics, should be diverted to make plain the conditions in which this medicament best serves its valuable purpose. Its clean record in mild cases of infection sufficiently counters the criticism that to attempt to produce complete disinfestation in hookworm infection is immoral."

The final chapter on prevention discusses the various methods for preventing or reducing soil infestation by sanitary measures fitted for rural districts and the more primitive peoples. The final chapter on hookworm campaigns boldly takes the ground that such campaigns are in the interest of health. "Taking the world as a whole, with the possible exception of the

malarial organisms ankylostoma is responsible for more unhappiness and inefficiency than any other parasite and for the most part indirectly for no inconsiderable number of deaths. Practically all tropical countries are permeated with the worm, and in places where the conditions for its propagation are not unfavorable it may reduce four-fifths of the population to a continual state of chronic ill-health which is only terminated by their premature decease, commonly from some secondary infection." Lane therefore defends the campaign for complete disinfestation as the only really effective one and cheapest in the long run, now made possible by his D C F or, if presumably necessary, the D C F F, to get the last worm! "Take, for example, India. If freedom from infection increases the earning power of labor by a third only (25 per cent to 50 per cent being ordinary findings) the aggregate wages earned will be increased by £100,000,000 a year."

"India is but a sample, what applies to her applies to more than half the population of the world. And if disinfestation could be brought about by the wave of a wand how different would the tropical world be, different in sanitation, in health, in vigor, in riches, and in contentment. Towards this end is it not worth while to work, and spend, and wait?"

**The National Encyclopedia.** Editor in Chief Henry Suzzallo, Ph.D. Sc.D. LL.D. President of the Carnegie Foundation for the Advancement of Teaching. Editorial Director W. W. Beardsley. In 10 volumes. Fabrikoid \$68. Leather \$89. De Luxe edition Morocco \$189. Various paginations with illustrations. New York: P. F. Collier & Son Company 1932.

This new encyclopedia is planned especially for readers who wish accurate information and easily readable and up-to-date rather than exhaustive monographs on various topics. It has been prepared by a distinguished group of cooperating editors under the general direction of Prof. Henry Suzzallo, president of the Carnegie Foundation for the Advancement of Teaching. The book discusses thoroughly recent developments in history, politics, international affairs, war debts, the national election of 1932 and similar recent problems.

In the medical section of this encyclopedia organized and edited by Dr. Morris Fishbein, some 200 writers contributed. The total amount of space devoted to medicine is approximately 500,000 words. Thus the medical side of the encyclopedia may be considered modern, accurate, and altogether a fairly good guide to family medicine. Of particular value are the sections on anatomy and physiology.

The encyclopedia is published in ten volumes in a variety of bindings. It includes up-to-date maps of various sections of the world and is a most reliable and interesting reference work. Some of the longer articles are so well written and beautifully illustrated as to constitute in themselves good collateral reading in any field.

**Les icteres.** Par Etienne Chabrol, professeur agrégé à la Faculté de médecine de Paris. Paper. Price 75 francs. Pp. 523 with 72 illustrations. Paris: Masson & Cie 1932.

This monograph represents the accumulation of more than twenty years' study of jaundice. The papers of the author and his colleagues make a list amounting to 129. Many references—German, American and English as well as French—are made throughout the text. One has the impression of a thorough scholarly but personal rather than impartial presentation of the subject. The work is divided into four main parts. The first is devoted to the laboratory study of icterus, with a description of the technique for clinical study of pigments, bile salts and cholesterol. A method of using the diazo reaction of Ehrlich as a ring test is described and preferred by comparison to the colorimetric van den Bergh test. The use of the stalagmometer is demonstrated with experimental and statistical clinical examples of results. Dissociated jaundice is explained and illustrated. A bibliography of principal French publications relative to the study of bile salts is included. In regard to stool analysis for urobilin the author remarks that the Einhorn method of duodenal intubation has permitted the abandonment of quantitative stool analyses, which have become of only historical interest. The second main division of the work is concerned with the physiopathology of the various forms of icterus. These are divided into icterus by retention and icterus by hyperhemolysis. The problem of the origin of bile pigments is briefly reviewed, the work of American investigators is considered as well as that of the English and German. He con-

cludes in favor of the hepatogenic origin of bile pigment although including the accessory function of the general reticulo-endothelial system. The third main division is an extended clinical description and classification of syndromes characterized by jaundice. The fourth section, on treatment, is brief and includes surgical indications as well as medical procedures. In general the work is representative of the French school, it covers the subject in an interesting and scholarly way, it is by one who has studied the problems of bile and blood pigments in the clinic and in the laboratory, and it is well worth the attention of American students of jaundice.

**Obstetrícia operatória.** Pelo Professor Raul Briquet, lente catedrático de clínica obstétrica da Faculdade de medicina de São Paulo. 1 e 2 milhetros. Fabrikoid. Pp 540 with 379 illustrations. São Paulo. Companhia Editora Nacional 1932.

Briquet acknowledges his indebtedness to the works of Brindeau, Bumm, Couvelaire, DeLee, Stockel and Winter for many of the illustrations. The index of authors is comprehensive and gives easy access to the bibliography, which is given in detail at the conclusion of each chapter. The alphabetical index makes it easy for the reader to locate pertinent subject matter and enhances the value of the work for reference purposes. The table of contents gives a brief outline of the material contained in the twenty-five chapters. In one of the early chapters the author summarizes the indications for obstetric operations and later presents a synopsis of the different types, which is followed by more detailed considerations of the various operative procedures. He is elaborate in his description of spinal anesthesia but gives little consideration to local and inhalation anesthesia. Chloroform and ether are briefly discussed, but ethylene and nitrous oxide are not presented as valuable anesthetic agents. A chapter is devoted to a consideration of fetal trauma, and there is a complete and excellent discussion of birth trauma. This is more or less of an innovation and would seem to be a valuable addition to a work on operative obstetrics, at least it stresses the importance of these injuries and places the responsibility on the obstetrician. The various infections and their surgical management are given the necessary consideration, and many of the postoperative complications are discussed extensively. A short chapter dealing with metabolic complications is appended, in which acidosis and alkalosis are given special consideration.

**Local Provision for Higher Education in Saskatchewan.** An Advisory Memorandum on University Policy Proposed at the Request of the University of Saskatchewan. By W. S. Learned and E. W. Wallace. Chancellor Victoria University, Toronto. With a foreword by Henry Suzzallo, President of the Foundation. Bulletin No. 27. Paper. Pp. 30. New York: Carnegie Foundation for the Advancement of Teaching, 1932.

In his foreword, President Suzzallo points out that this report, apparently dealing with a local problem, has in reality a much broader significance. Both the situation analyzed and the tendencies recorded have been gathering weight and momentum in the United States and in Canada for many years. W. S. Learned of the foundation and Chancellor E. W. Wallace of Victoria University, Toronto, authors of the report, maintain that a junior college, so called, is not an incomplete fragment of a college locally administered for the sake of convenience. Not junior to anything and not a college at all. They hold that it is the dimly recognized culmination or capstone of a system of secondary education and, as such, should be incorporated into the educational life of the community.

**Aortitis aifilítica.** Por Pedro Cossio, encargado de la sección cardiología de la cátedra de semiología del Profesor Padilla. Paper. Pp. 150 with 35 illustrations. Buenos Aires: El Ateneo, [n. d.]

Postmortem examination of bodies at the institute of the Faculty of Medicine in Buenos Aires shows that 20 per cent of cardiovascular lesions are of syphilitic origin. In other countries the proportion is lower as the following figures seem to indicate: United States 10 per cent, Germany 6 per cent, and England, 5 per cent. The greater incidence in Buenos Aires is ascribed to a failure in the early diagnosis coupled with inadequate and incorrect therapy. With these facts in mind, the author has admirably set forth the pathologic anatomy, diagnostic criteria and roentgenologic aspects of syphilitic aortitis. This monograph is concise, clear and to the point, numerous illustrations enhance the value of the book.

**Der Weg zur rationalen Therapie.** Herausgegeben von Prof. Dr. A. Fraenkel. Vorträge gehalten zu Heidelberg vom 1. 3. August 1932 in der gemeinsamen öffentlichen Krankenanstalt Speyerershof. Boards. Price 10.80 marks. Pp. 183 with 35 illustrations. Leipzig: Georg Thieme 1933.

The "path to rational therapy," in the opinion of the editor of this book, lies through the quantitative application of specifically acting bodies in accordance with pharmacologic principles. This symposium, held at Speyerershof, an institution devoted to the treatment of chronic internal diseases is an attempt at exact study of dosage and the recording of the effects of medicines on man. In his introduction, Fraenkel stresses the point that internists should have as sharp indications and definite technique for their interventions as surgeons have for operations. In the present development of knowledge, a small, well studied group of medicines is much more desirable than a large number poorly understood. It is better for the physician to give nothing, when he is uncertain as to what to give, than to give a little medicine that is inactive or to give too much. Paul Martin gives a brief exposition of the mathematical basis of the clinical evaluation of medicines, elaborated more in detail in his *Methodenlehre*. Siebeck's discussion of the mercurial diuretics makes it evident that mersalyl (salyrgan) is the one that has almost displaced the others. Straub gives what one might call the "mechanics" and Fraenkel "quantitative considerations of digitalis therapy." For the latter purpose, intravenous administration must be preferred and strophanthin is most suitable, the minimal efficient dose of which the author places at from 0.3 to 0.4 mg. for the muscularly damaged heart. Insulin, thyroxine, arsphenamine, vitamin D, and liver therapy are dealt with in a practical quantitative manner, each by an expert in the respective field. The fact that much of this information is not yet available, excepting widely scattered in current literature, renders the report of this symposium highly desirable for the clinician who wishes to keep abreast of the latest developments and to be exact in his therapy.

**Sex and Internal Secretions. A Survey of Recent Research.** Edited by Edgar Allen, University of Missouri. With a foreword by Robert M. Yerkes, Yale University. Cloth. Price \$10. Pp. 951 with illustrations. Baltimore: Williams & Wilkins Company, 1932.

The Committee for Research in Problems of Sex, of the National Research Council has guided a program of research on fundamental problems of sex for the last ten years. This book presents the results of a cooperative survey, organized by Dr. Edgar Allen. It represents the phases of research on internal secretions in relation to sex in which the committee has been most interested. The book is intended for those who are concerned in the progress of research in the problems of the biology and physiology of sex and the sex glands. The treatment of the subject is strictly scientific, but it is presented in a manner comprehensible to those with only a modest biologic background. The authors of the various sections are masters in their particular field of investigation. No finality is claimed for many of the subjects presented, as the aim of the book is to present only a summary of the most important advances of the work in this field of investigation. The first part of the book attempts to develop the subject in a fundamental manner. The first chapter, by Frank R. Lillie, is an appropriate introduction, a general biologic discussion of the subject. In the next chapter Charles Danforth develops the interrelation of genetic and endocrine factors in sex. The succeeding chapters seek to develop the subject from the genetic background and an embryologic foundation. The general discussions are concluded by chapters on the deviation of sex and their causes, and metabolism and sex. The quantitative biologic estimation of sex is an important contribution of this part of the book. The following chapters deal with the specific sex hormone products: their biology, physiology and biochemistry. No previous book has presented such a vast fund of information on this subject in such a coherent and scholarly manner. The various chapters are presented in a scientific and interesting manner. The data are concisely summarized and a carefully chosen bibliography appears after each chapter. Publications of this type are distinctly valuable for contemporary research workers and they also serve a most useful purpose in stimulating correlated clinical research in this field of investigation. The book is indispensable for those interested in the scientific aspects of sex and internal secretions. It is also a valuable

addition to the library of any one who is interested in some of the more fundamental and recent advances in this subject. Physicians interested in any phase of endocrinology should read it

**The Significance of Phosphoric Esters in Metabolism** By Robert Robison, Ph.D. D.Sc. F.R.S. Professor of Biochemistry University of London. Cloth. Price \$2. Pp 104 with illustrations New York New York University Press 1932

This consists of three lectures related to pathologic chemistry, on the significance of phosphoric esters in metabolism, given under the auspices of the Herter Lecture Foundation in 1931, in the New York University and Bellevue Hospital Medical College. The Occurrence of Phosphoric Esters in Nature, Calcification of Cartilage and Bone, and Calcification in Vitro. The lectures include a survey of past research on the subjects closely related to the problems of most interest to the author, observations and findings of his own experimental studies accompanied by descriptive plates and postulated explanations to throw light on the mechanism of the chemistry of calcification and ossification. Tables of references are appended. The lectures are essentially of research interest.

**The Tides of Life The Endocrine Glands in Bodily Adjustment** By R. G. Hoskins, Ph.D. M.D. Director of Research Memorial Foundation for Neuro Endocrine Research Harvard Medical School. Cloth. Price \$3.50. Pp 352 with illustrations New York W. W. Norton & Company Inc. 1933

This is one of the best books so far written, for laymen, on the field of the endocrine glands. The author has a long experience as investigator in this field, particularly on the suprarenals. He has had long experience as editor of more scientific books on the endocrines and as editor of *Endocrinology*. He has the gift of simplicity and lucidity of expression combined with accuracy. Any one attempting in brief form to present an account of the significant aspects of the endocrines is in danger, on the one hand, of descending to marvel mongering, or of failing to do justice to the really remarkable advancement in human knowledge that has been made in the last four decades. Dr. Hoskins has escaped both of these pitfalls to a pleasing degree. While the book is primarily written for laymen and is both timely and welcome because of the great interest, the great confusion and the fog of fakery in the more popular literature on the subject, it may be read with much profit by physicians.

**Child Psychology** By Buford J. Johnson, Professor of Psychology in the Johns Hopkins University. Cloth. Price \$4. Pp 439 with 50 illustrations Springfield Ill. Charles C. Thomas 1932

This work is based on the experimental methods of observation and analysis. The author feels that the transition from simple mammalian behavior to complex adult psychology must bridge the period of childhood. It becomes obvious that a study of childhood is fundamental to the understanding of adult manifestations because the factors in the former are simpler, more direct and more apparent than in the latter. In workmanlike manner he proceeds to place the psychology of this period of life on a definite basis by making detailed observations of specific characteristics and analyzing the data. The results are recorded in chapters covering periods of growth, learning, infant responses, locomotion, manipulation, speech, attention and perception, thought, emotion, social behavior and personality and individual differences. To the everlasting frustration of the science affecting good women, from the harmless hausfrau to the executive mistress of a household establishment constituting the membership of the recent luxuriant growth of child study groups here is a book on 'child psychology'. The analytic school of matinee professors have pried pipped them into problems, complexes, egos and libidos. How the ladies will writhe when they learn the banal but disillusioning fact that all normal babies hold up their heads by the tenth day. No aspiring child study group will undertake to use this volume as a textbook. There is a forbidding frigidity of figures, a sturdiness of statistics that will immediately congeal the hot panting hunt for child psychology so called and its more sinister byways. Its cold catalogue of facts, its robust research review, its critical composure will freeze the rampant ardor of the skirt lifting head tossing, indignant laywomen, betrayed and deceived into prying between its covers. Dr.

Johnson will be suspected of a tongue-in-cheek maneuver by naively restoring a legitimate, long abused title to an innocently conceived scientific dissertation. From author to published work by way of eleven sculptured chapters, fifty tables and diagrams, 206 bibliographic references, and detailed author and subject indexes, there is no nonsense about this book. The genuineness of the contribution is reflected in the sterling character of its format.

**Der dialektische Materialismus und die klinische Medizin** Von Prof. J. Lifschitz. Allukrainische Gesellschaft zur Förderung der kulturellen Verbindungen mit dem Auslande. Paper. Pp 80. Kharkov Medwydaw 1932

This diatribe touches on various subjects ranging from metaphysics and psychology to an attack on the ideals of medical ethics and practice. Lifschitz sees in sovietism a panacea for all the supposed ills that may occur in the science and practice of medicine. In his bolshevistic propaganda he ridicules the methods of clinical medicine and is of the opinion that the main efforts of medicine should be directed toward public hygiene, sanitation and prophylaxis in general. He extols the socialization of medicine. He is an ardent advocate of the Marx-Lenin system, which he would introduce as the predominant concept in medical thought and practice. The pamphlet is difficult to read, and the thought is hard to follow. In this polemic the attitude is that of an iconoclast who offers nothing constructive, and who by invective, ridicule and destructive criticism would attempt to substitute a chimerical and unpractical system for one that has stood the test of time and still presents untold possibilities for the future of human welfare.

**Éléments de pharmacodynamie spéciale. Étude de l'action des divers médicaments.** Par Edgard Zunz, professeur à l'Université de Bruxelles. Tomes I et II. Paper. Price 190 francs per set. Pp 1271 with 167 illustrations. Paris. Masson & Cie 1932

This book is devoted chiefly to an exposition of the mode of action of various drugs. The therapeutic uses are touched on briefly and printed in small type. Nevertheless, purely from a didactic point of view and without attempting to hide its artificial character, the author employs a therapeutic classification for, after all, he hopes that an exact understanding of the principles and facts of pharmacodynamics may guide the practitioner in the administration of medicines and render pharmacotherapy more and more rational. It is certainly a classification that brings out in strong emphasis the most interesting utilizable effect of the drugs. Thus, quinidine is classified as an 'antibrilliant', salicylates and cinchophens are discussed under the heading 'anti-inflammatories'. The book will undoubtedly become an indispensable part of any working library on the action and uses of drugs that aims to be comprehensive.

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This volume will ably serve three purposes: as an introduction to dietetics as a recipe book for small-quantity cookery, and as a teaching guide for hospital dietitians. As a textbook of dietetics it lacks explanatory detail and is guilty of omissions (e.g. ketogenic and reducing diets) but is sufficiently comprehensive for the pupil for whom it is intended. The eighty recipes make the book serviceable to the nurse for reference when on private duty, while the logical arrangement of subject matter and simplicity of language make it a practical teaching aid in the classroom and laboratory.

**Clínica quirúrgica.** Por Pablo L. Mirizzi, profesor titular de clínica quirúrgica de la Facultad de medicina de Córdoba. Tomos II e III. Paper. Pp 308 304 with illustrations. Córdoba. Librería El Ateneo 1931 1932

These two volumes discuss varied surgical lesions. Conditions emphasized are acute and chronic diseases of the gall-bladder, chronic mastitis, malignant conditions of the breast and osteomyelitis. To each subject one chapter is allotted, with a complete case history followed by a discussion including surgical technique. A bibliography is appended to each chapter. The subjects are handled interestingly, but nothing new has been added to scientific literature.

cludes in favor of the hepatogenic origin of bile pigment although including the accessory function of the general reticulo-endothelial system. The third main division is an extended clinical description and classification of syndromes characterized by jaundice. The fourth section, on treatment, is brief and includes surgical indications as well as medical procedures. In general the work is representative of the French school; it covers the subject in an interesting and scholarly way, it is by one who has studied the problems of bile and blood pigments in the clinic and in the laboratory, and it is well worth the attention of American students of jaundice.

**Obstetrícia operatória.** Pelo Professor Raul Briquet lente catedrático de clínica obstétrica da Faculdade de medicina de São Paulo. 1 e 2 milheiros. Fabrikoid. Pp 540 with 379 illustrations. São Paulo: Companhia Editora Nacional. 1932.

Briquet acknowledges his indebtedness to the works of Brindeau, Bumm, Couvelaire, DeLee, Stöckel and Winter for many of the illustrations. The index of authors is comprehensive and gives easy access to the bibliography, which is given in detail at the conclusion of each chapter. The alphabetical index makes it easy for the reader to locate pertinent subject matter and enhances the value of the work for reference purposes. The table of contents gives a brief outline of the material contained in the twenty-five chapters. In one of the early chapters the author summarizes the indications for obstetric operations and later presents a synopsis of the different types, which is followed by more detailed considerations of the various operative procedures. He is elaborate in his description of spinal anesthesia but gives little consideration to local and inhalation anesthesia. Chloroform and ether are briefly discussed, but ethylene and nitrous oxide are not presented as valuable anesthetic agents. A chapter is devoted to a consideration of fetal trauma, and there is a complete and excellent discussion of birth trauma. This is more or less of an innovation and would seem to be a valuable addition to a work on operative obstetrics, at least it stresses the importance of these injuries and places the responsibility on the obstetrician. The various infections and their surgical management are given the necessary consideration, and many of the postoperative complications are discussed extensively. A short chapter dealing with metabolic complications is appended, in which acidosis and alkalosis are given special consideration.

**Local Provision for Higher Education in Saskatchewan. An Advisory Memorandum on University Policy Proposed at the Request of the University of Saskatchewan.** By W. S. Learned and E. W. Wallace, Chancellor Victoria University, Toronto. With a foreword by Henry Suzzallo, President of the Foundation. Bulletin No. 27. Paper. Pp. 30. New York: Carnegie Foundation for the Advancement of Teaching. 1932.

In his foreword, President Suzzallo points out that this report, apparently dealing with a local problem, has in reality a much broader significance. Both the situation analyzed and the tendencies recorded have been gathering weight and momentum in the United States and in Canada for many years. W. S. Learned of the foundation and Chancellor E. W. Wallace of Victoria University, Toronto, authors of the report maintain that a junior college so called, is not an incomplete fragment of a college locally administered for the sake of convenience. Not "junior" to anything and not a college at all. They hold that it is the dimly recognized culmination or capstone of a system of secondary education and as such, should be incorporated into the educational life of the community.

**Aortitis sífilítica.** Por Pedro Cossio, encargado de la sección cardiología de la cátedra de semiología del Profesor Padilla. Paper. Pp. 150 with 35 illustrations. Buenos Aires: El Ateneo. [n. d.]

Postmortem examination of bodies at the institute of the Faculty of Medicine in Buenos Aires shows that 20 per cent of cardiovascular lesions are of syphilitic origin. In other countries the proportion is lower as the following figures seem to indicate: United States 10 per cent, Germany 6 per cent and England 5 per cent. The greater incidence in Buenos Aires is ascribed to a failure in the early diagnosis coupled with inadequate and incorrect therapy. With these facts in mind, the author has admirably set forth the pathologic anatomy, diagnostic criteria and roentgenologic aspects of syphilitic aortitis. This monograph is concise, clear and to the point, numerous illustrations enhance the value of the book.

**Der Weg zur rationalen Therapie.** Herausgegeben von Prof. Dr. A. Fraenkel. Vorträge gehalten zu Heidelberg vom 1. 3. August 1932 in der gemeinsamen öffentlichen Krankenanstalt Speyerershof. Boards. Price 10.80 marks. Pp. 183 with 35 illustrations. Leipzig: Georg Thieme. 1933.

The "path to rational therapy," in the opinion of the editor of this book, lies through the quantitative application of specifically acting bodies in accordance with pharmacologic principles. This symposium, held at Speyerershof, an institution devoted to the treatment of chronic internal diseases, is an attempt at exact study of dosage and the recording of the effects of medicines on man. In his introduction, Fraenkel stresses the point that internists should have as sharp indications and definite technic for their interventions as surgeons have for operations. In the present development of knowledge a small, well studied group of medicines is much more desirable than a large number poorly understood. It is better for the physician to give nothing, when he is uncertain as to what to give, than to give a little medicine that is inactive or to give too much. Paul Martini gives a brief exposition of the mathematical basis of the clinical evaluation of medicines, elaborated more in detail in his *Methodenlehre*. Siebeck's discussion of the mercurial diuretics makes it evident that mersalyl (salyrgan) is the one that has almost displaced the others. Straub gives what one might call the "mechanics" and Fraenkel "quantitative considerations of digitalis therapy." For the latter purpose, intravenous administration must be preferred and strophanthin is most suitable, the minimal efficient dose of which the author places at from 0.3 to 0.4 mg. for the muscularly damaged heart. Insulin, thyroxine, arsphenamine, vitamin D, and liver therapy are dealt with in a practical quantitative manner, each by an expert in the respective field. The fact that much of this information is not yet available, excepting widely scattered in current literature, renders the report of this symposium highly desirable for the clinician who wishes to keep abreast of the latest developments and to be exact in his therapy.

**Sex and Internal Secretions. A Survey of Recent Research.** Edited by Edgar Allen, University of Missouri. With a foreword by Robert M. Yerkes, Yale University. Cloth. Price \$10. Pp. 501 with illustrations. Baltimore: Williams & Wilkins Company. 1932.

The Committee for Research in Problems of Sex, of the National Research Council has guided a program of research on fundamental problems of sex for the last ten years. This book presents the results of a cooperative survey organized by Dr. Edgar Allen. It represents the phases of research on internal secretions in relation to sex in which the committee has been most interested. The book is intended for those who are concerned in the progress of research in the problems of the biology and physiology of sex and the sex glands. The treatment of the subject is strictly scientific, but it is presented in a manner comprehensible to those with only a modest biologic background. The authors of the various sections are masters in their particular field of investigation. No finality is claimed for many of the subjects presented, as the aim of the book is to present only a summary of the most important advances of the work in this field of investigation. The first part of the book attempts to develop the subject in a fundamental manner. The first chapter by Frank R. Lillie, is an appropriate introduction, a general biologic discussion of the subject. In the next chapter, Charles Danforth develops the interrelation of genetic and endocrine factors in sex. The succeeding chapters seek to develop the subject from the genetic background and an embryologic foundation. The general discussions are concluded by chapters on the deviation of sex and their causes, and metabolism and sex. The quantitative biologic estimation of sex is an important contribution of this part of the book. The following chapters deal with the specific sex hormone products, their biology, physiology and biochemistry. No previous book has presented such a vast fund of information on this subject in such a coherent and scholarly manner. The various chapters are presented in a scientific and interesting manner. The data are concisely summarized and a carefully chosen bibliography appears after each chapter. Publications of this type are distinctly valuable for contemporary research workers and they also serve a most useful purpose in stimulating correlated clinical research in this field of investigation. The book is indispensable for those interested in the scientific aspects of sex and internal secretions. It is also a valuable

addition to the library of any one who is interested in some of the more fundamental and recent advances in this subject. Physicians interested in any phase of endocrinology should read it

**The Significance of Phosphoric Esters in Metabolism** By Robert Robison Ph.D. D.Sc. F.R.S. Professor of Biochemistry University of London Cloth Price \$2 Pp 104 with illustrations New York New York University Press 1932

This consists of three lectures related to pathologic chemistry, on the significance of phosphoric esters in metabolism given under the auspices of the Herter Lecture Foundation in 1931, in the New York University and Bellevue Hospital Medical College. The Occurrence of Phosphoric Esters in Nature, Calcification of Cartilage and Bone, and Calcification in Vitro. The lectures include a survey of past research on the subjects closely related to the problems of most interest to the author, observations and findings of his own experimental studies accompanied by descriptive plates, and postulated explanations to throw light on the mechanism of the chemistry of calcification and ossification. Tables of references are appended. The lectures are essentially of research interest.

**The Tides of Life The Endocrine Glands in Bodily Adjustment.** By R. G. Hoskins Ph.D. M.D. Director of Research Memorial Foundation for Neuro Endocrine Research Harvard Medical School Cloth. Price \$3.50 Pp 352 with illustrations New York W. W. Norton & Company Inc 1933

This is one of the best books so far written, for laymen, on the field of the endocrine glands. The author has a long experience as investigator in this field, particularly on the suprarenals. He has had long experience as editor of more scientific books on the endocrines and as editor of *Endocrinology*. He has the gift of simplicity and lucidity of expression combined with accuracy. Any one attempting in brief form to present an account of the significant aspects of the endocrines is "in danger, on the one hand, of descending to marvel mongering, or of failing to do justice to the really remarkable advancement in human knowledge that has been made in the last four decades." Dr. Hoskins has escaped both of these pitfalls to a pleasing degree. While the book is primarily written for laymen and is both timely and welcome because of the great interest, the great confusion and the fog of fakery in the more popular literature on the subject, it may be read with much profit by physicians.

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**Der dialektische Materialismus und die klinische Medizin** Von Prof. J. Lifschitz Allukrainische Gesellschaft zur Förderung der kulturellen Verbindungen mit dem Auslande Paper Pp 80 Kharkov Medwydaw 1932

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**Clínica quirúrgica** Por Pablo L. Mirizzi profesor titular de clínica quirúrgica de la Facultad de medicina de Córdoba Tomos II e III Paper Pp 308 305 with illustrations Córdoba Librería El Ateneo 1931 1932

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## Medicolegal

### Use of Patient as Clinical Material

(*Inderbitzen v. Lane Hospital (Calif.) 12 P (2d) 744*)

The patient sued the defendant hospital corporation and its managers for alleged malpractice in connection with her confinement. When she entered the hospital she was examined, according to the evidence by a young man whom she believed to be a medical student and by an older man summoned when she demanded that a doctor be called. Both made rectal and vaginal examinations without sterilizing their hands. She was then taken to the delivery room and there examined intimately two or three times by each of ten to twelve young men whom the patient believed to be students. The evidence purported to show that in spite of her protests she was several times rolled over and palpated about the body and on protest told to 'shut up'. A physician testifying on her behalf at the trial stated that he examined her two months after her child was born and that there was then a tear in her uterus which was infected and discharging profusely. At the conclusion of the evidence the defendants moved that the suit be dismissed because the charges of negligence and carelessness had not been proved. The trial court granted the motion and its action was in the first instance affirmed by the district court of appeal first district division number 1, California (7 P (2d) 1049 THE JOURNAL, Oct 22 1932 p 1454). The district court of appeal, however, reconsidered the case and reversed its prior decision.

It is the general rule said the court that the propriety or impropriety of particular medical treatment can be established only by expert medical testimony. This rule is however, subject to the exception that if the particular matter is one of general knowledge expert evidence is not necessary. In the present case, no medical expert testified that it was negligence for men with unsterilized hands to make rectal and vaginal examinations of the patient. But it has been held to be proper for a court to take judicial notice of the necessity for the use of ordinary care in sterilizing a hypodermic needle or the flesh into which it is to be inserted in administering a local anesthetic (*Barham v. Hiding* 210 Calif 206 291 P 173), and courts will likewise take judicial notice of the danger of infection to a woman about to give birth to a child from a vaginal examination performed with unsterilized hands. The repeated examinations of the patient, continued the court while she was in labor by ten or twelve men causing her to scream and protest, and the levity and rudeness that it is claimed was displayed, present "anything but a pretty picture."

As was said by the New York Court of Appeals in *Stone v. Illiam M. Eisen Co* 219 N Y 205, 114 N E 44

Decent and respectful treatment is implied in the contract from the confidential relation of the parties and especially because of the necessary exposure of the person required of the patient in connection with the services to be performed pursuant to the contract.

On behalf of the defendant the court was urged to presume that the treatment to which the patient was subjected was necessary and proper, or at least to hold that the court could not hold such treatment to be improper in the absence of medical testimony to that effect. Common sense, however, said the court tells any reasonable person that such treatment at the hands of so many is unnecessary and improper. Scientific knowledge is not essential for the determination of an obvious fact. This treatment, at least after the patient had objected to it, constituted an assault on her or trespass to her person. A physician or a medical student has no more right to lay hands on a patient against her will than has a layman.

For the reasons stated the action of the trial court in dismissing the suit was reversed.

**Evidence Testimony of Medical Experts Invading Province of Jury**—The plaintiff slipped and fell immediately thereafter he felt a stinging sensation through the small of his back. About twenty minutes later he felt faint and suffered a series of hemorrhages. Eventually he became unable to "navigate his feet" which in the opinion of a medical expert was due to some incoordination, lack of muscular coordination and is due possibly to some condition in his spinal cord. Alleging that his disability was caused solely by

the fall the plaintiff brought suit on an insurance policy which provided for certain benefits for effects resulting directly and exclusively of all other causes from bodily injuries sustained wholly through external violent and accidental means. The insurer contended that the disability was the result of gastric ulcers present at the time of the fall. From a judgment for the plaintiff the insurer appealed to the Supreme Court of Iowa. The insurer complained that the trial court had permitted several medical experts to testify, in effect that the fall was the sole proximate cause of the plaintiff's present disability. This testimony, said the Supreme Court was a clear invasion of the province of the jury and was improper. In a case of this kind, it may be important for an expert to enlighten the jury on subjects of a technical or scientific character. An expert may be permitted to express an opinion as to whether in his judgment, a certain condition, arising in a scientific or technical field may have been brought about from certain causes. An expert, however may never be permitted to invade the province of the jury by expressing an opinion as to what in fact did cause that condition. The judgment was reversed and the cause remanded for a new trial—*Justis v. Union Mut. Casualty Co (Iowa) 244 N W 696*

## Society Proceedings

### COMING MEETINGS

- American Medical Association Milwaukee June 12 16 Dr Olin West  
535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Chicago June 12 13 Dr Clifford G  
Crutcher 636 Church Street Evanston Ill Secretary
- American Association for the Study of the Feeble-Minded Boston May 31  
June 3 Dr Groves B Smith Beverly Farms Codfrey Ill Secretary
- American Association of Medical Milk Commissions Milwaukee June  
12 13 Dr Harris Moak 360 Park Place Brooklyn Secretary
- American Dermatological Association Chicago June 8 10 Dr W H  
Cuy 500 Penn Avenue Pittsburgh Secretary
- American Federation of Organizations for the Hard of Hearing Chicago  
June 18 22 Miss Betty C Wright 1601 35th Street NW Washing  
ton D C Secretary
- American Heart Association Milwaukee June 13 Dr Irl C. Riggan  
450 Seventh Avenue New York Executive Secretary
- American Laryngological Rhinological and Otolological Society Chicago  
June 8-10 Dr Robert L. Loughran 33 East 63d Street New York  
Secretary
- American Proctologic Society Chicago June 12 13 Dr Frank G  
Runyon 1361 Perkiomen Avenue Reading Pa Secretary
- American Psychiatric Association Boston May 29 June 2 Dr Clarence  
O Cheney 722 West 168th Street New York Secretary
- American Society of Clinical Pathologists Milwaukee June 9 12 Dr  
A. S. Giordano 531 North Main Street South Bend Ind. Secretary
- American Therapeutic Society Milwaukee June 9 10 Dr Oscar B  
Hunter 1801 Eye Street, N W Washington D C Secretary
- American Urological Association Chicago June 20 22 Dr Gilbert J  
Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Association for Research in Ophthalmology Milwaukee June 13 Dr  
Conrad Berens 35 East 70th Street New York Secretary
- Association for the Study of Allergy Milwaukee June 12 13 Dr Warren  
T. Vaughan 808 Professional Building Richmond Va. Secretary
- Association for the Study of Internal Secretions Milwaukee June 12 13  
Dr F. M. Pottenger 1930 Wilshire Boulevard Los Angeles Secretary
- Conference of State and Provincial Health Authorities Washington D C  
June 5-6 Dr A. J. Chesley State Department of Health St Paul
- Connecticut State Medical Society Hartford May 24 25 Dr Charles W  
Comfort Jr 27 Elm Street New Haven Secretary
- Maine Medical Association Poland Spring June 26-28 Dr Philip W  
Davis 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Boston June 5 7 Dr Walter L. Burrage  
182 Walnut Street Brookline Secretary
- Medical Library Association Chicago June 19 21 Miss Marjorie J  
Darrach 645 Mullett Street Detroit Secretary
- Medical Women's National Association Milwaukee June 11 12 Dr Inez  
A. Bentley 45 Gramercy Park, New York, Secretary
- Minnesota State Medical Association Rochester May 22 24 Dr E. A.  
Meyerding 11 West Summit Avenue St. Paul Secretary
- Montana Medical Association of Anaconda July 12 13 Dr E. C.  
Balsam Box 88 Billings, Secretary
- National Tuberculosis Association Toronto Canada June 26 30 Dr  
Charles J. Hatfield Seventh and Lombard Streets Philadelphia  
Secretary
- Nebraska State Medical Association Omaha May 23 25 Dr R. B.  
Adams Center McKinley Building Lincoln Secretary
- New Jersey Medical Society of Atlantic City June 6-9 Dr J. B.  
Morrison 66 Milford Avenue Newark Secretary
- North Dakota State Medical Association Valley City May 31 June 2  
Dr Albert W. Skelsey 20 1/2 Broadway Fargo Secretary
- Pacific Coast Oto-Ophthalmological Society San Francisco June 23 30  
Dr F. C. Cordes Fitzhugh Building San Francisco, Secretary
- Rhode Island Medical Society Providence June 3 Dr J. W. Leech  
167 Angell Street Providence Secretary
- West Virginia State Medical Association Charleston May 22 24 Mr  
Joe W. Savage, Professional Building Charleston Executive Secretary

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### American Journal of Cancer, New York

17 1292 (Jan.) 1933

- Spindle Celled Tumor in Fowl Following Injection of 1, 2, 5, 6 Dibenzenethracene in Fatty Medium. H. Burrows. London, England.—p. 1
- Effect of Irradiation on Normal and Neoplastic Brain Tissue. B. J. Alpers and H. K. Pancoast. Philadelphia.—p. 7
- Size of Operable Cancers. Study of Seven Thousand One Hundred and Seventy Nine Specimens. W. C. MacCarty. Rochester, Minn.—p. 25
- Correlation of Roentgen Ray Picture with Histology in Certain Breast Lesions. S. P. Reimann. Philadelphia and P. S. Seabold. Upper Darby, Pa.—p. 34
- Heliotropism of Cholesterol in Relation to Skin Cancer. A. H. Roffo, Buenos Aires, Argentina.—p. 42
- \*Studies on Hydrogen Ion Concentration of Blood in Cancer. J. O. Ely. Scranton, Pa.—p. 58
- Studies of Growth Factors of Embryo Extract. W. C. Hueper, A. Allen, M. Russell, G. Woodward and M. Platt. Philadelphia.—p. 74
- Effects of Neoparsphenamine on Spontaneous Breast Tumors of Mice. W. C. Hueper and S. Itami. Philadelphia.—p. 106
- Incidence and Nature of Tumors in Captive Wild Mammals and Birds. H. I. Ratcliffe. Philadelphia.—p. 116
- Analysis of Factors Entering into Radium Pack Intensities. M. C. Reinhard. Buffalo.—p. 136
- Cancer Mortality of Amsterdam, Holland, by Religious Sects. F. L. Hoffman.—p. 142

**Hydrogen Ion Concentration of Blood in Cancer.**—Using the method of Hastings and Sendroy, as modified by McDonald and co workers, Ely studied the  $p_{\text{H}}$  of the blood of normal subjects at rest, normal subjects during activity, untreated cancer patients previously treated cancer patients, patients with benign tumors, a group of cancer patients showing the effect of treatment on the blood  $p_{\text{H}}$ , a group of tumor patients designed to show any relation between the blood  $p_{\text{H}}$  and existing anemia, fracture cases and a miscellaneous group of patients presenting malignant growths. He observed that cases of uncomplicated and untreated skin and superficial cancers usually have a normal blood  $p_{\text{H}}$ . Uncomplicated cases of untreated and advanced internal cancers usually have a blood  $p_{\text{H}}$  above normal. Patients with benign tumors usually have a blood  $p_{\text{H}}$  above normal. In a number of pathologic conditions other than cancer the blood  $p_{\text{H}}$  is elevated, comparably to that in cancer. A blood  $p_{\text{H}}$  persistently high in spite of treatment appears to be a bad prognostic sign in cancer. The  $p_{\text{H}}$  of the blood by itself is of little, if any, diagnostic value in cancer.

### American J. Obstetrics and Gynecology, St. Louis

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- Complications of Radium Therapy in Gynecology. G. G. Ward. New York.—p. 1
- Technic of Radiation Therapy in Uterine Carcinomas. H. Schmitz, Chicago.—p. 10
- Analysis of Menstrual Changes in Tuberculous Women. E. M. Jameson. Saranac Lake, N. Y.—p. 22
- Epithelial Regeneration in Uterine Clands and on Surface of Uterus. G. N. Papanicolaou. New York.—p. 30
- Behavior of Epithelium in Explants of Human Endometrium. E. F. Hirsch and H. O. Jones. Chicago.—p. 37
- Bilateral Renal Agenesis in Fetus Associated with Oligohydramnios. G. S. Bates. Detroit.—p. 41
- Ovarian Embryoma. Report of Case. P. J. Sarma. Chicago.—p. 51
- \*Kraurosis Vulvae. Report of Thirteen Cases. M. A. Goldberger. New York.—p. 58
- Supports of Uterus. H. Koster. Brooklyn.—p. 67
- Internal Rotation of Fetal Head from Point of View of Comparative Obstetrics. I. Rudolph and A. C. Ivy. Chicago.—p. 74
- Respiratory Function of Detached Placenta. C. M. Brandau. Houston, Texas.—p. 95
- \*Bercovitz Test for Pregnancy. Report of Two Hundred and Sixty Cases. A. G. King. New Orleans.—p. 99
- Varicose Veins of Pregnancy. N. J. Killobourne. Los Angeles.—p. 104
- Congenital Pneumonia of Stillborn and New Born. J. Kaldor. Brooklyn.—p. 113
- Subacute Bacterial Endocarditis as Complication of Pregnancy. W. F. Mengert. Philadelphia.—p. 121

- Heartblock in Pregnant Women. J. P. Greenhill. Chicago.—p. 125
- Some Urologic Complications in the Female. G. Kolischer. Chicago.—p. 128
- \*Use of Adrenalin in Treatment of Acute Inversion of Puerperal Uterus. Report of Case. J. A. Urner. Minneapolis.—p. 131
- Case of Laryngeal Diptheria Complicating Puerperium. J. Hersli, Pittsburgh.—p. 133
- Quinine Insufflation Treatment of Trichomonas Vaginalis. Preliminary Report. J. H. Sure and J. E. Bercey. Milwaukee.—p. 136
- Blood Chemistry Studies of Normal New Born Infants. Preliminary Communication. I. Blood Sugar Estimations. A. W. Holman and A. Mathieu. Portland, Ore.—p. 138
- Ureteronephrectomy During Early Pregnancy. R. B. McKnight and R. Patterson. Charlotte, N. C.—p. 141
- Hypertrophy of Clitoris. Report of Two Cases. L. W. Mason. Denver.—p. 144
- Cyanosis of the New Born. Case Reports Showing Value of Roentgen Ray as Aid in Diagnosis. E. H. Dennen. New York.—p. 147
- Rupture of Corpus Luteum as Cause of Acute Abdominal Symptoms. Case Reports. W. R. Payne. Newport News, Va.—p. 150
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- Report of Results After Twelve Years in a Case of Uterovesical Anastomosis. H. D. Furniss. New York.—p. 154
- Instrument to Outline Pfannenstiel Incision. S. S. Schochet and J. E. Lackner. Chicago.—p. 155
- Case in Which Several Foreign Bodies Were Found in Vagina of Feeble-Minded Pseudohermaphrodite. R. A. Livendahl. Chicago.—p. 156
- Velamentous Insertion of Cord with Rupture and Subsequent Death of Fetus in Uterus. Report of Case. H. B. Boley. Brooklyn.—p. 156
- Yellow Atrophy of Liver in Latter Part of Pregnancy, with Recovery. Report of Case. C. Duncan and G. R. MacLachlan. Brooklyn.—p. 157

**Kraurosis Vulvae.**—Goldberger presents an analysis of thirteen cases of kraurosis vulvae of which eight were treated by vulvectomy. He studied thirteen cases of carcinoma in order to determine a relationship to kraurosis. Both from the literature and from his analysis, carcinoma was found to develop in kraurosis in 50 per cent of the cases. Unsuspected carcinoma was present in two of the eight cases treated by vulvectomy. He observed that roentgen and hormonal therapy was ineffective. Vulvectomy is the treatment for the cure of kraurosis and the prevention of carcinoma.

**Bercovitz Test for Pregnancy.**—King points out that the value of the Bercovitz pupillary reaction in pregnancy, although it is exceedingly simple is greatly impaired by the difficulty in reading the result and by the fact that much depends on the personal equation of the observer. It consists in the instillation into one eye of a few drops of the patient's blood pregnancy being indicated by either a dilatation, a contraction, or an alternation of the two, in contrast with the other eye in which there is no change. In 107 cases of proved pregnancy the author observed a positive result in 68 per cent, a doubtful response in 10 per cent and a negative result in 21 per cent. Epinephrine, 1:1,000, will give similar reactions to some extent. In seven cases out of forty-five, epinephrine gave a correct positive result when the blood test was either negative or doubtful. The reaction is not constant in the same woman at different examinations. The reaction disappears early in the puerperium in most but not in all cases. In 108 tests on nonpregnant persons there were four false positive responses and eleven doubtful reactions.

**Endocarditis as Complication of Pregnancy.**—From his study of two cases, Mengert states that subacute bacterial endocarditis does not seem to affect materially the course of pregnancy, labor and the puerperium. Pregnancy complicated by subacute bacterial endocarditis should be allowed to proceed to normal conclusion because the mother's course is almost certain to terminate fatally and it is extremely doubtful if sacrifice of the child contributes, even in the smallest way, to her chance of survival. Delivery by the most conservative means possible after full dilatation of the cervix with plentiful first stage analgesia is the obstetric treatment of choice. Cesarean section is justified only in the interest of the baby when the mother is dying. The babies seem to do well if they are not too premature at birth.

**Epinephrine in Treatment of Puerperal Uterus.**—Urner reports a case of acute inversion of the puerperal uterus in which the intramuscular injection of epinephrine seemed to have been effective in producing relaxation of the uterus and cervix and to have greatly facilitated manual replacement. There is little doubt of its value in protecting the patient from further shock during operation. The author suggests

that epinephrine is a valuable adjunct in the reposition of the acutely inverted puerperal uterus by either manual or operative method.

### American Journal of Physical Therapy, Chicago

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Physical Therapy in Raynaud's Disease. C R Brooke, Newark, N J—p 10  
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Fundamentals of the Life Process All Animal Life Is a Manifestation of the Transformation of Unoxidized Organic Material Margaret G Woodward—p 17  
Feet and Their Troubles E. J Drinkall Chicago—p 26

### American Journal of Physiology, Baltimore

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\*Effect of Epinephrine Instillation on Iris of Normal Animals. Margaret MacKay Sawyer and T Schlossberg Boston—p 153  
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Factors Determining Form of Electrical Response from Optic Cortex of Rabbit. S H Bartley and G H Bishop St. Louis—p 173  
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Conducted Contractions Without Action Potentials in Single Muscle Fibers. S Gelfan and G H Bishop St. Louis—p 237  
Examination of Cerebrospinal Fluid for Oxytoxic Activity as Tested by Rabbit Uterine Fistula Preparation Gertrude Sanders Friedman and M H Friedman Philadelphia—p 244  
Continuous Intravenous Administration of Epinephrine and Glucose in Dogs Further Observations P C Samson with technical assistance of Hulda Rohde Chicago—p 255

**Humoral Agents and Gallbladder Contraction.**—In their experiments on dogs, Voegtlin and his associates attempted to determine whether some product of the digestion of fat and egg yolk may excite the gallbladder to contract on being absorbed. This was done to ascertain whether some humoral agent other than cholecystokinin may be concerned in gallbladder evacuation on ingesting egg yolk and cream or olive oil. Their results indicate that no other humoral agent than cholecystokinin is concerned in gallbladder contraction and

evacuation. Egg yolk injected intravenously usually had no effect on liver volume, intragallbladder pressure and blood pressure. Emulsified olive oil injected intravenously in doses that increase the liver volume caused an artificial or mechanical rise of the intragallbladder pressure. From 3 to 5 cc. of a 0.2 per cent solution of hydrochloric acid and 10 cc. of a 5 per cent solution of sodium chloride, as well as fresh pancreatic juice (from 10 to 50 cc.), had no effect on the gallbladder when injected intravenously. Bile or bile salts injected intravenously tended to decrease the tone of the gallbladder. Olive oil and egg yolk digests were too toxic to use intravenously for their work. When such digests were extracted by the method for obtaining cholecystokinin from the duodenal mucosa, no gallbladder excitant was obtained. Oleic acid (from 1 to 5 cc) and glycerin (from 3 to 5 cc) given intravenously had no effect on the gallbladder or liver volume. Chyle, containing from 1 to 25 per cent fat and obtained from a dog after being fed egg yolks and cream on being injected intravenously in amounts of from 10 to 120 cc did not cause the gallbladder to contract and evacuate in anesthetized or unanesthetized dogs.

**Effect of Epinephrine on Normal Iris.**—Sawyer and Schlossberg state that epinephrine, if instilled for a sufficiently long time into the conjunctival sac of normal cats or of rabbits, exerts an effect on the muscles of the iris. The effect of minimal doses of instilled epinephrine in cats is to cause a constriction of the pupil. Larger amounts of the drug produce a distinct mydriasis in the instilled eye, which is in some cases preceded and followed by a period of contraction. Previous removal of the nictitating membrane in cats greatly increases the effect of epinephrine instilled into the otherwise normal eye. The authors took measurements of the pupils by means of a millimeter scale held close in front of the eyes and at right angles to the vertical pupillary opening. The eyes were subjected to a standard illumination. The epinephrine solutions for instillation were made up fresh for each experiment, 1 10,000 and 1 2,000 dilutions were employed. The solution was instilled in only one eye, the other was used as control. The instillation was made by holding apart the eyelids and dropping in a sufficient amount of solution to flood the eyeball. Every few minutes the instilled solution was removed by wiping the eye with cotton and fresh drops were added. The time during which the epinephrine solution was kept in contact with the conjunctiva varied from five to thirty minutes. Intravenous injection of epinephrine into a normal animal showing contraction of the pupil of one eye from a previous instillation of epinephrine produced a more striking and more persistent mydriasis in that eye than in the normal one. Intravenous injection of epinephrine into a normal animal showing dilatation of one pupil from a previous instillation produced in the instilled eye a more marked mydriasis than in the other eye. In this instance the mydriasis of the instilled eye remained for a much longer time after the normal pupil had reached its original diameter.

### American Journal of Psychiatry, Baltimore

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- Case of Multiple Personality C C Wholey Pittsburgh—p 653  
Organization of State Wide Mental Hygiene Committee with Especial Reference to Its Relationship to Medical Profession L M A. Maeder Philadelphia—p 689  
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Acquired Hydrocephalus Report of Two Cases Occurring in Adults Lydia B Pierce Westborough Mass—p 769  
Importance of Small Blood Vessels of Brain in Psychiatric Problems N W Winkelman Philadelphia—p 775  
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Are Histologic Lesions of Dementia Paralytica Specific? F Wertham Baltimore—p 811  
What the Community Expects of the State Hospital G K Pratt New York—p 823  
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## American Journal of Surgery, New York

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- Prefibrosis at the Vesical Neck Its Pathologic Status and Clinical Significance J A Hyams and S E Kramer New York—p 19
- Vesicovaginal Fistula Adherent to Right Pubic Ramus Management of a Difficult Case L E Phaneuf Boston—p 29
- Biologic, Bacteriologic and Clinical Study of Larval or Maggot Therapy in Treatment of Acute and Chronic Pyogenic Infections G C Weil R J Simon and W R Sweadner Pittsburgh—p 36
- \*Selective Therapeutic Pneumothorax in Acute Pulmonary Suppuration R A Bendove, New York—p 49
- Diagnostic Novocaine Block Followed by Sympathectomy for Relief of Amputation Stump Pain Report of Case. R B Drury and H H Schwarzell Columbus Ohio—p 55
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- Metabolism of Spermatozoa in Semen J A Killian New York—p 76
- \*Internal Drainage Its Significance in Prevention and Treatment of Postoperative Pulmonary Atelectasis M L Lubin San Francisco—p 80
- \*Complete and Permanent Removal of Toe Nail in Onychogryposis and Subungual Osteoma P W Lapidus New York—p 92
- The Bradford Frame Efficient Means of Securing Rest D King Ann Arbor Mich—p 95
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- Simple Rotary Luxation of the Atlas. L J Friedman and A M Tiber New York—p 104
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- Intra gastric Polypus Report of Case D L Borden Washington D C—p 115
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- Duplication of the Bowel M K Smith New York and H Cohen Brooklyn—p 120
- Duplication of Gallbladder Case Report with Review of Literature F G Slaughter and H H Trout Roanoke Va—p 124
- Studies on Effect of Splenectomy on Genitalia of White Mice L Zweibel Newark N J—p 126
- \*Tuberculosis of Thyroid Case Report and Review of Literature A Van Ravenswaay and A C Van Ravenswaay Boonville, Mo—p 128
- Chordoma of Third Lumbar Vertebra Report of Case. R Zollinger Cleveland—p 137
- Solitary Cyst of Kidney Excision of Cyst with Suture of Kidney A R Stevens New York—p 140
- \*Diverticulosis and Diverticulitis. C W Barrett Chicago—p 143
- Cellulod Correction Leggings for Bowlegs or Knock knees E D McBride, Oklahoma City—p 148

**Larval Therapy in Pyogenic Infections**—Weil and his associates used maggot therapy in twenty-nine cases of a variety of pathogenic organisms such as *Streptococcus hemolyticus*, *staphylococcus*, *pneumococcus*, *Bacillus tuberculosis* B coli and B welchii. Included in this group of infections were felons, tuberculous inguinal adenitis, large areas of cellulitis, infected abdominal incisions following appendical abscess, infected amputation stumps, including also six cases of gas bacillus infection. The entire group of patients except one made splendid recoveries with good return of function. Considerable work must yet be done to place the therapy on a practical basis. The authors suggest the name 'larval therapy'. No detrimental effects or complications have developed from the use of larvae prepared by their present method of sterilization. The authors believe that the use of an iodine solution to sterilize the partly grown maggots that show contamination after egg sterilization just before they are implanted in the wound, is of great value. They have placed the time element of implantation on a practical working basis. They did not encounter opposition from their patients. Their results compare favorably to any other form of treatment and in most instances are far superior. Its value in the treatment of gas bacillus infection and other soft tissue infections is exceptional. They have never observed any deleterious activity of the larvae on normal viable human tissues. The larvae show an unusual activity against abnormal or malignant structures. The authors believe that aside from the scavenger action, the larvae produce a definite excretory proteolytic substance which hastens liquefaction of devitalized tissue.

**Pneumothorax in Pulmonary Suppuration**.—According to Bendove, the difference in the elasticity and consistency of the diseased and healthy lung tissue as well as the difference in the intrapulmonary and intrapleural pressures make it possible for the air introduced into the pleural cavity to localize over the diseased portion without curtailing much of the function of the nondiseased portion in the treated lung. This selective type of pneumothorax can be instituted only in recent cases of pulmonary suppuration when the lesion is soft and plastic. Every case of acute pulmonary suppuration should first be treated expectantly, but, if no spontaneous cure has occurred within four weeks after the diagnosis has definitely been made, active surgical intervention is indicated and pneumothorax of the selective type is the least radical and most effective therapy at that time. A successful selective pneumothorax immobilizes the diseased portion without reducing the vital capacity, stimulates drainage, entails little respiratory and circulatory changes and causes little discomfort to the patient both at the initiation of the treatment as well as at the subsequent reinspirations. The insufflatory amount should vary from 150 to 250 cc., and the intervals from three to five days. As the patient improves, the periods between insufflations are increased. The collapse should be maintained at least three months after the abatement of all subjective symptoms. In cases of chronic pulmonary suppuration with indurated rigid lesions and pleuretic adhesions, the selective action of artificial pneumothorax can never be elicited. Pneumothorax alone is of little therapeutic value in such cases, though it still finds its use as a preparatory procedure to radical thoracic surgery.

**Internal Drainage and Atelectasis**—The prophylaxis and treatment of postoperative pulmonary atelectasis demands a clear understanding of the mechanism of its etiologic factors, namely internal drainage. By internal drainage, Lubin means the movement of secretions from place to place within the tracheobronchial tree so that bronchi are occluded and infection spreads. The movements of these secretions are dependent on the posture of the patient, the nature and quantity of the tracheobronchial secretions and the size and course of the bronchial stems. Buccal and nasal secretions by gravitating into the tracheobronchial tree even during the presence of the cough reflex, play a significant part in the production of pulmonary atelectasis and pneumonia. The early recognition of postoperative pulmonary atelectasis is important for two reasons: (1) it allows an earlier institution of treatment and facilitates a more prompt return of the atelectatic lobe to normal, and (2) it obviates the dreaded postoperative pneumonia which may occur in atelectasis of longer duration. The administration of postural exercises, carbon dioxide inhalations and expectorants are of proved value in the treatment of postoperative pulmonary atelectasis. Bronchoscopy, in specific instances, deserves a place in the armamentarium for the prophylaxis and treatment. An appreciation of internal drainage and the proper application of its fundamental factors can diminish the incidence of postoperative pulmonary atelectasis and postoperative pneumonia.

**Removal of Toe Nail**—Lapidus offers a plastic operation for complete and permanent removal of the toe nail in cases of onychogryposis, subungual osteoma and any deformity of the toe nail in which complete removal is indicated. The operation consists of a U-shaped incision surrounding the toe nail the free ends of the U extending proximally to the head of the basal phalanx. Another slightly concave incision, opened distally, is made through the skin covering the root of the nail. This incision crosses the long axis of the toe and connects the two sides of the U. The dorsal structures, consisting of the edge of the skin around the nail, the matrix of the nail, and the nail itself, are entirely removed. About one half the distal portion of the terminal phalanx is exposed subperiosteally and resected. This leaves a short dorsal and long plantar flap. The plantar, tongue shaped flap is turned over the stump of the terminal phalanx and sutured to the shorter dorsal flap. In cases of primary union of the wound the patient may resume his work in from two to three weeks, wearing the usual shoes.

**Tuberculosis of Thyroid**—Tuberculous lesions of the thyroid have been reported in from 4 to 12 per cent of people

dying of active tuberculosis and in an average of 0.34 per cent of the thyroids removed at operation for all causes. The Van Ravenswaays state that, of the 107 cases reported in the literature, active tuberculosis was observed elsewhere in the body in fourteen cases. Among the factors that may be concerned in the development of this condition are preexisting goiter, the presence of lymphoid tissue within the thyroid, hyperthyroidism and a normally high tissue resistance to tuberculosis. Clinically, the types of lesion seen vary between two extremes: a necrotic type with caseation or liquefaction and a fibrotic type associated with giant cells and lymphoid cells. The preoperative diagnosis is possible only by aspiration of a cold abscess or with material obtained from a draining sinus. Not infrequently there are lesions in the thyroid that may be confused with tuberculosis. The authors report a typical case of tuberculosis of the thyroid in a man, aged 43.

**Diverticulosis and Diverticulitis**—Barrett believes that constipation, putrefactions, infections and irritations produce changes in the intestine that make it subject to diverticulosis. By keeping the intestinal tract fit, changes that favor the development of diverticulosis may be avoided. Diverticulosis furnishes pockets which become filled with fecal masses, stercoroliths, foreign substances and bacteria, which result in reactions known as *diverticulitis* and *peridiverticulitis*. Bacteria invade the intestinal wall at such distances as to make "paradiverticulitis" an appropriate term for the resulting reaction. The reactions in the intestinal wall result in spastic and organic obstruction or stenosis. The passing of bacteria through the thinned diverticula or the thickened infected or ruptured intestinal wall leads to peritoneal and mesenteric infection. Infections from this intestinal source are not infrequently causes of arthritis. When diverticulosis has once developed, great care should be exercised to avoid excess of food, irritating foods and foods containing small sharp seeds. The bowel should be kept empty and harmful bacteria reduced to a minimum. Enemas and careful manipulations should be used to free the diverticula of stercoroliths, foreign bodies and bacteria. Uncomplicated diverticulosis is not incompatible with comfort and good health. Diverticulosis favors the development of intestinal and diverticular flora which invade the intestinal wall and may pass through it, resulting in peritoneal and other infections, or may be picked up by the blood or lymph streams and may be the source of arthritis. Diverticulosis and moderate forms of diverticulitis and peridiverticulitis, and even paradiverticulitis may be treated by nonsurgical methods. Surgery may be required to combat complicated conditions. One may reasonably expect to see surgery grow in favor for the less severely complicated cases as one's understanding increases, yet at present caution and conservatism are the watchwords, and one must be sure that the patient will stand the operation.

### Annals of Surgery, Philadelphia

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- Cysticercus of Brain S. S. Allen and H. W. Lovell Ann Arbor Mich.—p. 1
- Chondroma of Intervertebral Disks B. J. Alpers F. C. Grant and J. C. Yaskin Philadelphia—p. 10
- Primary Hemangioma of Spine L. Barnard and R. G. Van Nuy Oakland Calif.—p. 19
- Posttraumatic Painful Osteoporosis R. Fontaine and L. G. Herrmann Strasbourg France—p. 26
- Irradiation in Carcinoma of Breast I. I. Kaplan and R. Rosh New York—p. 62
- Sarcoma of Stomach J. L. Ransohoff and T. R. Dickson Cincinnati—p. 68
- Partial Hysterectomy and Use of Stump of Uterus to Support Bladder in Vaginal Operation for Prolapse G. P. LaRoque Richmond Va.—p. 74
- Pilonidal Sinus M. Weinstein Long Island City N. Y.—p. 80
- Syphilitic Leg Ulcers Clinical Features Presented by One Hundred Cases R. A. Cutting New Orleans—p. 85

**Posttraumatic Osteoporosis**—Fontaine and Herrmann review the literature on the treatment of posttraumatic osteoporosis and report the results that they obtained in treating their twenty-two patients. They conclude that posttraumatic osteoporosis is a disease entity with characteristic roentgenologic changes in the three main stages of the evolution of the disease. The posttraumatic osteoporosis which is left untreated usually results in an ankylosis of one or more of the joints in the region of the porotic bones. Operations on the sympathetic nervous system offer a rational and effective surgical treatment for this disease entity. Cases of posttraumatic

osteoporosis treated by sympathectomy during the initial stages of the disease respond quickly and the undesirable sequelae of the disease are prevented. Periarterial sympathectomy is usually sufficient for cases of posttraumatic osteoporosis when it is limited to the distal part of the extremities. Cervical and lumbar sympathetic ramisection should be reserved for the extensive forms of the disease.

**Irradiation in Carcinoma of Breast**—Kaplan and Rosh report the results of irradiation and surgery in 270 cases of cancer of the breast that they treated from 1924 to 1930. In their service they have found postoperative irradiation of value in prolonging the life of the patients and in preventing recurrences. Radiation therapy alone has proved of value for inoperable cases and in several chosen operable ones. Judgment in choosing cases and proper technic in treatment are essential for attaining good results. The technic that they believe will give the best results is a combination of external irradiation over the local area involved and the adjacent lymphatic drainage tissues, together with interstitial treatment with properly designed and filtered radium needles or tubes, as described by Kaplan, by Adair, and by Lee and Pack. As in all surgical procedures, the technic employed must be scientifically carried out by those trained in such work, mediocre attempts at irradiation are as harmful as mediocre surgery.

**Partial Hysterectomy and Use of Uterus Stump**—LaRoque describes an operative procedure for the relief of cystocele which is as follows. The cervix is pulled down in the usual way and amputated nearly up to the internal os with an electric cautery knife. The cervix is held steady. The vaginal mucosa is divided from a point three-fourths inch behind the meatus almost to the point of cautery amputation. The vaginal mucosa is dissected off around to the side. The bladder is pushed up by a gauze covered finger and with the aid of scissors and pushed upward until the peritoneum comes into view. The peritoneum is divided in the usual way, and the fundus is caught either with the finger or a tenaculum and pulled into the vagina as traction is released on the cervix. A large or small piece of the uterus is excised, including the fundus and all the endometrium, leaving only enough uterine wall to bring together by suture and place under the bladder for support. The edges of the uterus are held in neat apposition with mattress sutures. The stump of the small piece of remaining uterus is interposed between the bladder and the vagina. For this purpose the figure eight stitch prevents bleeding and subsequent accumulation of blood in the space after operation. Finally, the edges of the incision in the vagina are brought together by interrupted sutures. Perineorrhaphy is then performed. The author has performed this operation for varying degrees of prolapse in women ranging in age from 36 to 65 years. The appearance at the conclusion of the operation and nearly a year later has been satisfactory.

**Pilonidal Sinus**—Weinstein's suggestions for permanent removal are based on thirteen cases in which operation was performed by him. The differentiation of pilonidal sinus from fistula-in-ano is readily made by the absence of granulation tissue and the upward direction on probing. Pilonidal sinus is a special local downgrowth of epithelium, originating from the true skin. A large section of the tissue with a broad base and narrower superficial skin surface will help to prevent recurrence. If necessary, periosteum of the sacrum and coccyx, and gluteal fascia are removed when involved. No attempt should be made to eliminate dead space completely. Local infiltration anesthesia is induced with 1 per cent procaine hydrochloride with epinephrine chloride. The ischemic field produced permits easy recognition of the outermost regions of the lesion. An elliptic incision is carried well beyond the sinus opening and all scars of previous operations, extending through the skin and into the subcutaneous adipose tissue. The scalp is then tilted at an angle to undermine the skin and a thin layer of fat, for a distance of from one-half to three-fourths inch. Further dissection is performed in an oblique plane so that the base of the excised tissue is much larger than the superficial skin covered portion. In the deep aspect of the wound the dissected mass is stripped from the periosteum of the sacrum and coccyx in the midline and on the sides from gluteal fascia covering the gluteal muscles. From four to five tension sutures of the Stewart

type coapt the skin and grasp a portion of underlying subcutaneous tissue. A small cigaret drain is placed in the lowermost angle. No attempt is made to approximate subcutaneous tissue, gluteal fascia or muscles, as individual layers.

### Archives of Neurology and Psychiatry, Chicago

20:1 212 (Jan.) 1933

- Surgical Anatomy of Sensory Root of Trigeminal Nerve. L. Davis and H. A. Haven. Chicago.—p. 1.
- \*Variations in Skin Anesthesia Following Subtotal Resection of Posterior Root. Report of Twenty Six Cases Illustrating a Series of Variations. H. Wilkins. Oklahoma City and E. Sachs. St. Louis.—p. 19.
- Tic Douloureux. Anatomic and Clinical Basis for Subtotal Section of Sensory Root of Trigeminal Nerve. W. G. Spiller and C. H. Frazier. Philadelphia.—p. 50.
- Effect of Roentgen Rays on Central Nervous System. Results of Large Doses on Brains of Adult Dogs. R. S. Lyman. Shanghai, China. P. S. Kupalov. Leningrad. U. S. S. R., and W. Scholz. Munich, Germany.—p. 56.
- Chromatolysis of Efferent Neurons. F. D. Geist. Madison, Wis.—p. 88.
- \*Status Marmoratus. Etiology and Manner of Development. K. Lowenberg. Ann Arbor, Mich. and W. Malamud. Iowa City.—p. 104.
- \*Amyotrophic Lateral Sclerosis Complicated by Subacute Combined Degeneration of Cord. Clinical and Pathologic Report of Case. G. B. Hassin. Chicago.—p. 125.
- Effect of Habituation on Blood Pressure in Schizophrenia. H. Freeman. Worcester, Mass.—p. 139.
- \*Factors Influencing Experimentally Produced Convulsions. H. M. Keith, Rochester, Minn.—p. 148.
- Cholesterol and Lecithin Content of Blood in Cryptogenic Epilepsy. L. Rosen. Frances Krasnow and J. Notkin. New York.—p. 155.
- Incubation Period of Clinical Neurosyphilis. H. H. Hopkins. Baltimore.—p. 158.

**Variations in Skin Anesthesia**—Wilkins and Sachs record a series of twenty-six cases in which a section of the posterior root for trigeminal neuralgia was done and in which the sensory loss has been atypical. The portion of the posterior root carrying the ophthalmic fibers is frequently not a separate bundle of fibers. The authors' work confirms that of Frazier and Whitehead that the arrangement of fibers in the posterior root varies and that the fibers interlace or cross. Though some fibers were left in areas in which the patient had pain, the fibers to the area in which the "trigger zone" existed were always cut, and only one of their patients has had a recurrence, thus far, as a result of leaving some fibers. This may mean that some of the pain in cases of trigeminal neuralgia is referred pain. This view has been expressed frequently in regard to the pain in the first division of which patients complain, and it may also be true of pain in the other divisions.

**Status Marmoratus**—Löwenberg and Malamud present four cases, in three of which postmortem examinations showed, among other lesions, the presence of status marmoratus, in the fourth case the clinical picture and history were typical of the syndrome of status marmoratus. In the authors' cases the important features were as follows: 1. There was a negative family history and a normal interval between birth and the onset of the disease. 2. The clinical history of the onset of the disease and the histologic picture showed that the disease developed on the basis of an encephalitic process, most probably acquired. 3. The involvement was widespread, affecting the cortex as well as the basal ganglia, while in one of the cases the status marmoratus was present in the cortex and not in the ganglia. They conclude that, in view of their observations and a number of similar data reported by other observers the original concept of the nature of this disease will have to be revised.

**Amyotrophic Lateral Sclerosis**—Hassin reports in detail the case of a man, aged 48, who entered the Cook County Hospital because of inability to walk and rigidity of the left upper extremity. A study of the pathologic data justified a diagnosis of amyotrophic lateral sclerosis complicated by a degeneration of a sensory tract of fibers, the columns of Goll, and, to a lesser extent those of Burdach. The author concludes that amyotrophic lateral sclerosis essentially a motor nerve disorder clinically may show sensory disturbances. Pathologically, it may be associated with degeneration of the sensory tracts suggesting a combination with subacute combined degeneration of the cord. From the extent and intensity of the degeneration, one may assume that one morbid process arises after the other both being caused by the same as yet unknown factor. The basal portions of the posterior horns of the gray matter of the spinal cord may be a part of the patho-

logic picture in atypical cases of amyotrophic lateral sclerosis and be responsible for the subjective and objective sensory disturbances occasionally observed in this morbid condition.

**Experimentally Produced Convulsions**—Of the various acetone bodies tested, Keith observed that aceto-acetic acid and its sodium salt have the most pronounced effect in preventing thujone convulsions, experimentally produced in rabbits. The injection of acids (acetic, lactic, citric and hydrochloric) as such and of sodium pyruvate has a definite anticonvulsant effect under the conditions of the experiment but they are less effective than aceto-acetic acid. Epinephrine, solution of pituitary double U. S. P. strength (surgical) and ampoules of pitressin greatly augment the convulsant action of thujone and the action of epinephrine, and pitressin persists for at least three minutes after intravenous injection. These drugs will cause a subconvulsant dose to become convulsant. Epinephrine eliminates the refractory period due to the administration of thujone. The administration of desiccated thyroid and thyroxine did not definitely increase the susceptibility of the rabbits to convulsions produced by thujone. The administration of insulin to rabbits with resulting hypoglycemia did not increase their susceptibility to convulsions. Large amounts of water by stomach tube, either alone or accompanied by intramuscular injection of pitressin may possibly increase the animals' susceptibility to convulsions produced by thujone. There was a slight increase in the amount of water in the tissues of the brain of animals receiving pitressin.

### Archives of Otolaryngology, Chicago

17:1 134 (Jan.) 1933

- Effect of Silver Nitrate on Nasal Mucosa of Rabbits. H. I. Lillie and J. H. Childrey. Rochester, Minn.—p. 1.
- Comprehensive Roentgen Examination of Paranasal Sinuses. H. B. Philips. New York.—p. 8.
- Primary Submucous Laryngeal Abscesses. J. D. Kernan and H. P. Schugt. New York.—p. 22.
- \*Erysipelas of Pharynx and Larynx. B. Katz. Los Angeles.—p. 30.
- Mucosa of Maxillary Sinuses of Rabbit. Production of Experimental Eosinophilia by Stimulation of Nerve and by Trauma. P. R. Nemours. St. Louis.—p. 38.
- Spontaneous Perforation of Sigmoid Sinus Following Mastoid Operation. Report of Three Cases. A. J. Smith. Yonkers, N. Y.—p. 43.
- Postdiphtheritic Laryngeal Stenosis. Review of Literature and Report of Six Cases. C. H. Krieger. Louisville, Ky.—p. 49.
- Variations in Temperature of Mucous Membrane of Nose. A. J. Cone. St. Louis.—p. 65.
- \*Primary Jugular Bulb Thrombosis. Study of Twenty Cases. J. L. Maybaum and J. L. Goldman. New York.—p. 70.

**Erysipelas of Pharynx and Larynx**—Katz points out that erysipelas of the pharynx and larynx presents a definite clinical and pathologic entity a diagnosis of which can be made without manifestations on the skin. If acute edema of the pharynx or larynx develops, with fever and general malaise, subsequent to or during acute tonsillitis or a cold the disease should be considered as erysipelas, if streptococci are the causative germ. The milk-borne epidemics of sore throat were definitely reported by some as epidemics of erysipelas of the pharynx and larynx. The so-called septic sore throat, considered from the standpoint of the source of infection, manner of transmission, complications and bacteriologic resemblance, is identical with erysipelas of the throat. Treatment in addition to symptomatic measures, should include serum and vaccine therapy.

**Primary Jugular Bulb Thrombosis**—Maybaum and Goldman observed, in a study of twenty cases of primary jugular bulb thrombosis over a period of eleven years, that certain anatomic factors, such as a thin bony partition separating the middle ear from the bulb, a high dome and dehiscences, predispose to involvement of the bulb. In children or young adults with a history of an acute infection of the middle ear, a fluctuating fever, a progressive anemia, changes in the ocular fundi and evidences of a general infection otherwise unaccounted for, primary jugular bulb thrombosis should be suspected. The additional presence of a positive blood culture establishes the diagnosis. A majority of the cases follow a characteristic course, suggesting a clinical entity. Blood culture studies are of paramount aid in diagnosis. Those that the authors took before operation (nineteen of the twenty cases) were positive for *Streptococcus hemolyticus*. The following conditions must be considered in the differential diagnosis: acute tonsillitis, pneumonia, erysipelas, acute naso-

pharyngeal infections and pyelonephritis. In the surgical treatment, occlusion of the main channels of systemic invasion especially of the torcular end of the diseased sinus, is of prime importance. An operation on the jugular bulb should be performed only if there is a continuance of bacteremia and symptoms general or local, after the main channels have been obliterated. Extensive operations on the jugular bulb are seldom indicated. For a favorable outcome early diagnosis and prompt surgical intervention, properly directed are imperative.

### Arch. of Physical Therapy, X-Ray, Radium, Chicago

14 150 (Jan.) 1933

- Physiotherapy Essential Specialty in Medicine J. E. Rueth Milwaukee—p. 5  
Comparative Value of Various Therapeutic Rays in Ophthalmic Diseases O. B. Nugent Chicago—p. 11  
Air Therapy W. T. Johnson Philadelphia—p. 19  
\*Juvenile Paresis Diathermy Hyperpyrexia in Malaria Resistant Patient Case Report. N. H. Polmer New Orleans—p. 23  
Relationship of Colon Infection to Systemic Disease. L. J. Walker Milwaukee—p. 26

**Juvenile Dementia Paralytica**—Polmer reports the case of a boy, aged 12, presenting diagnostic criteria of juvenile dementia paralytica, in whom vigorous antisyphilitic treatment and malarial therapy were employed for eleven months without any subjective improvement or sufficient objective laboratory signs to warrant a diagnosis of an arrested case or a remission. After the administration of twelve diathermy hyperpyrexia treatments over a period of six weeks the spinal fluid of the patient was serologically negative on two successive examinations, repeated ten days apart. The patient was discharged as improved seven weeks after the series of treatments were begun.

### Canadian Public Health Journal, Toronto

24 152 (Jan.) 1933

- Serum Therapy of Streptococcus Infection A. Wadsworth Albany N. Y.—p. 1  
Development of Provincial Mental Health Service B. T. McGhie Toronto—p. 8  
Essentials in Treatment of Early Syphilis S. C. Peterson Winnipeg Manit.—p. 14  
Incineration of Municipal Refuse J. R. Menzies Montreal—p. 20  
Role of Radiology in Prevention of Cancer G. E. Richards Toronto—p. 29

### Endocrinology, Los Angeles

17 1122 (Jan. Feb.) 1933

- Endocrine Studies XXXV Association of Hepatic Dysfunction with Thyroid Failure A. W. Rowe Boston—p. 1  
\*Exophthalmic Goiter Without Increased Basal Metabolic Rate I. Bram Philadelphia—p. 23  
\*Some Effects of a Glycerin Extract of Suprarenal Cortex Potent by Mouth Preliminary Report R. G. Hoskins and H. Freeman Worcester Mass.—p. 29  
Multiple Glandular Sclerosis Addison's Disease and Basedow's Disease K. Herman Subotitzka Yugoslavia—p. 36  
Chronic Adrenal Insufficiency Produced by Caustery F. A. Hartman Buffalo—p. 43  
Diagnosis and Treatment of Hypogonadism in the Male E. P. McCullagh D. R. McCullagh and N. F. Hicken Cleveland—p. 49  
Some Chronic Effects of Anterior Pituitary Sex Hormone on Weights of Body Ovaries Uterus Pituitary and Adrenal Glands F. E. Emery Buffalo—p. 64  
Role Played by Thyroid Gland in Production of Gross Body Activity C. P. Richter Baltimore—p. 73  
Case of Spontaneous Pigment Loss in Brown Leghorn Capon and Plumage Reaction to Thyroxine Mary Juhn Chicago—p. 88  
Relationship of Iodine to Basal Metabolic Rate and to Changes in Thyroid Gland in Pregnant Rabbits Experimental Study J. D. Stewart and F. R. Menne, Portland Ore.—p. 93

**Exophthalmic Goiter**—Bram discusses 220 cases of exophthalmic goiter without an increase above the conventional normal basal metabolic rate and without loss in weight. Of these patients, 74 were untreated, 8 had cases of protracted duration with so called 'burned-out thyroid' 12 had been treated with iodine preparations prior to coming under the author's observation 117 had undergone subtotal or total thyroidectomy and 9 had received excessive roentgen treatment. The data derived from these cases appear to indicate that a high metabolic rate is not imperative in the diagnosis of exophthalmic goiter. It appears that the disease is not synonymous with hyperthyroidism and that the syndrome may occur without demonstrable thyroid excitation.

**Glycerin Extract of Suprarenal Cortex Potent by Mouth**—Hoskins and Freeman treated ten schizophrenic

patients, initially presenting low blood pressure for ten weeks with glycerin extract of suprarenal cortex. The dosage was gradually increased from an equivalent of about 100 grains (6.5 Gm) to 450 grains (29 Gm) of fresh gland substance daily. The systolic blood pressure was increased in all cases. The average initial pressure was 105.7 and the final pressure 132.5 mm of mercury. Similarly, the diastolic pressure was increased from 69 to 84 mm. The blood pressure returned to approximately the initial levels after the treatment was discontinued. There was an irregular increase in the weight from an average of 62.6 Kg at the beginning to 65.4 Kg at the end. There was also a fairly consistent increase in the red cell counts of about 300,000 on the average in each case. At the end the increase had fallen to about 150,000 cells above the initial level. There was evidence of early stimulation of the renal function with a later return toward initial levels. There was an apparently significant increase in the oxygen consumption rate but this was not sustained. There was a slight downward trend in the nitrogenous bodies of the blood.

### Nebraska State Medical Journal, Lincoln

18 140 (Jan.) 1933

- Early Diagnosis of Carcinoma of Cervix H. Schmitz, Chicago—p. 1  
Intravenous Use of Acriflavine in Treatment of Pyelitis and Cystitis Case Report. A. Sachs and E. M. Walsh Omaha—p. 5  
\*New Technic Designed for Electrocoagulation of Vascular Tumors A. F. Tyler Omaha—p. 6  
Errors of Omission in Treatment of Head Injuries J. J. Keegan Omaha—p. 9  
\*Pathology Diagnosis and Treatment of Tumors of Breast H. H. Davis Omaha—p. 11  
Traumatic Surgery in Rural Hospital C. G. McMahon Superior—p. 16  
Malignant Tumors of Uterus in the Young A. A. Smith Hastings—p. 19  
Limitations of Iodine in Treatment of Goiter R. H. Whitham Lincoln—p. 21  
Report of Committee on Medical Education and Hospitals J. S. Welch Lincoln—p. 23  
Neoplastic Versus Inflammatory Infectious Disease of Intracranial Cavity Report of Interesting Case in Which Causal Organism Was Influenza Bacillus W. A. Buntin Cheyenne Wyo.—p. 25  
Tetanus Case Report F. M. Tushla Auburn—p. 27

**Electrocoagulation of Vascular Tumors**—Tyler states that vascular tumors that cannot be removed with the sharp scalpel can be readily removed by electrocoagulation. By employing his specially designed technic the operation can be bloodlessly and rapidly done. He uses two pointed active electrodes instead of one active and one inactive electrode as is generally done. He places the two electrodes in contact with the tissue about 1.5 cm. apart, and the high frequency current is thus short circuited between them. In this manner the intense heat generated between the two electrodes is sufficient to coagulate blood in large vessels and vascular spaces before the walls are opened. In this way the tissue is not separated until after it has been coagulated, and no bleeding occurs. In cases in which the shape of the tumor lends itself to amputation, a line may be coagulated across the base. This is accomplished by holding the two electrodes in contact with the tissues at one place long enough to coagulate the tissue between them and then moving to the next area. The author has also applied his technic in lobectomy of the lung. This technic makes the removal of the lobe bloodless and expeditious. One must thoroughly coagulate the bronchus and vessels before pulling the lobe away from its attachment. This type of coagulation can be done only with a current of from one million to one million eight hundred thousand frequencies per second. The higher frequencies cut too much and coagulate too little. The advantages of electrocoagulation by his technic are accuracy of control, no bleeding, absence of pain, absence of afterpain and little scar tissue.

**Tumors of Breast**—In his study of tumors of the breast Davis concludes that the breast is practically devoid of lesions before puberty. A solid freely movable tumor between the ages of puberty and 25 is most likely a fibroadenoma and especially so if multiple. If single, one must suspect carcinoma and excise the tumor at once, rather than waiting to see if it will grow. Diffuse painful breasts, with the pain accentuated before menstruation and with no definite lumps but only a diffused nodularity that is tender, is probably mastoplasia. It is a physiologic process is not surgical, has no serious sequelae and is treated by ovarian residue. If multiple

nodules appear, especially after the age of 25, it is most likely cystiphorous desquamative epithelial hyperplasia, which is of importance because it may become carcinomatous. These cysts are differentiated from solid fibro-adenomas by transillumination. If the cyst is single it should be excised and if multiple mastectomy should be done. Bleeding from the nipple indicates most commonly papilloma or carcinoma. If unassociated with a lump, it is probably the former. However, owing to its malignant tendency it should be excised and, if multiple, the entire breast should be removed. Retraction of the nipple is most commonly congenital, follows an acute inflammation of the breast or is due to carcinoma. If it has developed recently in a middle aged or elderly woman a radical mastectomy should be performed. Any single painless lump of the breast should be considered as cancer until proved otherwise, and immediate biopsy should be advised.

### Pennsylvania Medical Journal, Harrisburg

36:231-304 (Jan.) 1933

- \*Neurodermatitis and Lichenification O S Ormsby Chicago—p 231
- \*Diet in Disease C E Ervin Danville—p 238
- Keratocosis Corrected by Corneal Contact Glasses Demonstration of Case, H E Thorpe Pittsburgh—p 243
- Benign Neoplasms of Esophagus Ellen J Patterson Pittsburgh—p 244
- Symposium on Infections of Upper Respiratory Tract Influence of Upper Respiratory Tract Infections on Pulmonary System T McCrae Philadelphia—p 247
- Id. Upper Respiratory Tract Infections that Affect General System A J Wagers Philadelphia—p 250
- Pathologic Information from Tympanic Membrane J A Babbitt, Philadelphia—p 254
- Economic Value of Periodic Health Examination F A Faught Philadelphia—p 261
- Nonoperative Treatment of Fractures of Shaft of Femur Results of Fifty Consecutive Cases in Children and Adolescents V Mooney Pittsburgh—p 264

**Neurodermatitis and Lichenification**—Ormsby states that prurigo nodularis (lichen obtusus corneus) is an entity and unrelated to lichen planus. Sufficient evidence has not as yet been presented to place the disorder as a nodular variety of lichenification. A chronic itching papular eruption of the axillae and pubes (Fox-Tordyce disease), originally considered a variety of neurodermatitis, is excluded from this group and should be classed as an entity. Giant or hypertrophic lichenification may be employed to designate those cases in which the process of lichenification is excessive and unusual lesions are produced. Verrucous lichenification as described by the author includes lichen planus hypertrophicus and lichen planus verrucosus of the English authors or hypertrophic lichen corneus or lichen verrucosus of the French. Some of these cases occur independently of lichen planus. Lichenification is an important factor in these lesions. There is no objection, therefore, in placing the group as examples of verrucous lichenification. Lichen planus hypertrophicus and verrucosus however should retain their positions as varieties of lichen planus. The term neurodermatitis should be applied and limited to the disorder described by Vidal as lichen simplex chronicus and by Brocq as neurodermatitis circumscriptus et diffusus or circumscribed pruritus with lichenification and diffuse pruritus with lichenification. The mosaic thickenings induced by scratching and rubbing in eczema, sensitization dermatitis, mycotic infections, lichen planus, scabies, prurigo, mycosis fungoides, leukemia, and lymphogranulomatosis should be recognized as secondary lichenifications quite distinct from neurodermatitis. The author concludes that, as neurodermatitis frequently occurs in neurotic persons an exhaustive search should be made to determine the provocative factors relating to these symptoms, and measures should be taken for their relief. In the localized patches roentgen rays cautiously employed are of much value. Crude coal tar with Burrow's solution has been of much service. Tricresol from a 25 per cent to a full strength solution for localized patches in the scalp originally suggested by Stillians is of great service. The internal administration of arsenic is valuable but should be done with all proper precautions.

**Diet in Disease**—Ervin discusses in a general way the question of diet in disease. The public, as a whole, seems to expect dietary restrictions in all manner of disease irrespective of the nutritional requirements, and the profession has had a tendency to court the idea rather than to follow the best professional judgment. The author believes that both the public and the profession should share the responsibility of improper

nutrition in disease. There is no advantage in the customary protein restriction in nephritis. In fact the patients do better on a liberal intake of food including protein. He emphasizes the increased caloric requirements brought about by fever and gives the dietetic requirements in some nonfebrile diseases such as thyroid dysfunctions, gout, peptic ulcer and hypertension. The patient's appetite is the most valuable guide in determining what to give. The patient usually knows what his stomach will tolerate.

### Rhode Island Medical Journal, Providence

16:116 (Jan.) 1933

- Management of Breech Delivery P Appleton Providence—p 1
- Books—Shall They be Sterilized? H E Smiley Providence—p 5
- Gastric Hemorrhage J F Kenney Pawtucket—p 10

### South Carolina Medical Assn. Journal, Greenville

29:126 (Jan.) 1933

- Some Eye Conditions Commonly Unrecognized or Mismanaged by General Practitioner J W Jervy Jr Greenville—p 4
- Some Recent Advances in Surgery of Sympathetic Nervous System A T Moore Columbia—p 6
- Meningeal Lesions Complicating Aural Infections M R Mobley and J P Price Florence—p 14
- Primary Pulmonary Carcinoma H Rudisill Jr Charleston—p 18

### Southern Medical Journal, Birmingham, Ala.

26:1106 (Jan.) 1933

- Diabetic Children E P Joslin Boston—p 1
- Mental Health of Children Pediatric Responsibility H Casparis, Nashville Tenn—p 7
- Medical Aspects of Child Behavior Esther L Richards Baltimore—p 10
- Psychiatry and the General Practitioner C O Cheney New York—p 14
- Comments on Syphilis Problem in the United States H J Morgan Nashville Tenn—p 18
- Use of Protein in Diet W S McCann Rochester N Y—p 22
- Diagnostic Value of Roentgen Ray in Certain Intrathoracic Diseases Pleural Effusions Bronchiectasis and Atelectasis A C Christie Washington D C—p 25
- Importance of Multidimensional Diagnosis and Correspondingly Comprehensive Treatment in General Practice L F Barker Baltimore—p 28
- Practicing Physician and Public Health K Emerson New York—p 31
- Chief Duty of Health Officer J D Applewhite Macon Ga—p 36
- \*Local Infiltration Anesthesia in Obstetrics J P Greenhill Chicago—p 37
- Role of Cervix in Obstetrics and Gynecology G D Royston St Louis—p 44
- Relations of Pathologist to Cancer Problem B T Simpson Buffalo—p 48
- Prophylaxis and Early Diagnosis of Carcinoma of Uterine Cervix H Schmitz Chicago—p 54
- Clinical Features of Diverticulitis and Cancer of Sigmoid E Eliot Jr New York—p 58
- Carcinoma of Colon I Abell Louisville Ky—p 64
- Chronic Cardiospasm Report of Fatal Case with Pathologic Findings E B Freeman Baltimore—p 71

**Infiltration Anesthesia in Obstetrics**—Greenhill presents a technic of local anesthesia which is indicated in dilation and curettement, spontaneous delivery, episiotomy and repair, suture of both recent and old lacerations, low forceps operations, cesarean section (both classic and cervical), Porro hysterectomy, anterior vaginal hysterotomy (vaginal cesarean section) and sterilization (both abdominal and vaginal). Because direct infiltration anesthesia is so much safer than all the other forms of anesthesia and so simple to use it should be employed oftener than it is at the present time. There is no doubt that the increased use of local anesthesia will help to reduce the appalling number of unnecessary maternal deaths. His technic is as follows. In nearly all cases, his patients are given a hypodermic of  $\frac{1}{4}$  grain (0.016 Gm) of morphine and  $\frac{1}{500}$  grain (0.0003 Gm) of scopolamine fifteen minutes before the infiltration of the local anesthetic is begun. The patient should be made as comfortable as possible during the operation. For the local anesthetic he uses a 0.5 per cent solution of procaine hydrochloride, although a 0.25 per cent solution is almost as effective. To this solution after sterilization he adds 2 drops of 1:1,000 epinephrine for each ounce. The amount of solution he makes depends on the type of operation to be performed. For small vaginal operations, such as episiotomy, repair of lacerations, dilation and curettement and low forceps operations, not more than 4 ounces (120 cc) is necessary. For cesarean sections between 6 and 8 ounces and in Porro operations between 8 and 10 ounces is necessary.

## Southern Surgeon, Atlanta, Ga

1 265 345 (Jan) 1933

- \*Symptoms and Operative Treatment of Carcinoma of Lower Bowel with Method for Elimination of Colostomy W W Babcock Philadelphia—p 265
- \*Diagnosis and Treatment of Diaphragmatic Hernia with Especial Reference to Selective Surgical Treatment C A Hedblom Chicago—p 275
- Injury of Laryngeal Branches of Vagus Nerve in Thyroid Surgery W H Prioleau Charleston S C—p 287
- Types of Reconstructive Surgery of Orbital Region V P Blair J B Brown and W G Hamm St Louis—p 293
- Gynecologic Backwash of Obstetrics with Particular Reference to Displacements of Uterus. C J Miller New Orleans.—p 301
- \*Complicating Lesions of Appendicitis H A Royster Raleigh N C—p 311
- Transurethral Prostatic Resection Its Present Status and Its Future M Stern De Land Fla—p 317
- Suggestions for Treatment of Certain Fractures of Upper Extremity L V Rush and H L Rush Meridian Miss—p 325
- Dropfoot from Infantile Paralysis and Cord Injuries Corrected by Campbell Bone Block Operation O L Miller Charlotte, N C—p 328
- \*Calcified Abdominal Lymph Node Simple Method for Distinguishing Some Such Nodes from Stone in Midportion of Ureter E. Floyd and J L Pittman Atlanta Ga—p 333
- Splenectomy for Hemolytic Jaundice E H Hargis and H E. Simon Birmingham Ala—p 334

**Treatment of Carcinoma of Lower Intestine**—Babcock states that carcinomas of the large intestine should be diagnosed early by the change in peristaltic activity, by melena and by digital, proctoscopic and roentgen examinations. Offensive, bloody, mucous stools or intestinal obstruction usually indicate a growth of long standing. Operative excision, if the growth is not too far advanced, gives reasonable hope for recovery. From the ileum to the midsigmoid an intraperitoneal or exteriorization, excision and anastomosis, with careful attention to the blood supply to the retained bowel is the preferred type of operation. From the midsigmoid to the lower rectum, a combined abdominoperineal operation is preferred as permitting thorough exploration followed by radical removal of the involved segment of bowel with the tributary lymphatics as well as the preservation of an adequate circulation for the retained intestine, which cannot be obtained by the perineal operation. The author describes a simplified method of abdominoperineal resection in which colostomy is eliminated and the bowel is not divided or invaded until after the peritoneal cavity is sealed. With the higher rectal growths, the sphincters may be preserved, with the lower ones a wide resection of the pelvic floor is necessary. In the cases in which he has used this operation, less shock and reaction have followed than after any radical type of operation the author has tried. The mortality in nonselected cases has been about 10 per cent. For the small, low-lying rectal carcinomas, with low infiltrative tendencies, a wide local excision through the enlarged anus may at times be adequate. He has had no experience with the metastases from anal growths to the inguinal lymphatics as described by Miles, but this possibility should be considered if the growth involves the sphincters. A properly made and sufficiently large perineal anus may be cared for with less derangement of the clothing than a colostomy and is easily controlled by a pad. The perineal opening also gives a better warning of an impending defecation than does the colostomy, and by digital examination one may obtain early evidence of a recurrence in the pelvis at a time when it may be effectively excised or destroyed.

**Diagnosis and Treatment of Diaphragmatic Hernia**—Hedblom points out that thoracic symptoms and signs of diaphragmatic hernia may include substernal pain, dyspnea, cyanosis, palpitation, a feeling of oppression or of suffocation, dextrocardia and variable abnormal signs on percussion and auscultation. Abnormal symptoms and signs are chiefly such as are suggestive of mild gallbladder disease or of peptic ulcer and those of partial or complete obstruction often without abdominal distention. Positive diagnosis rests essentially on the roentgenologic demonstration of abdominal viscera in the thorax following contrast mediums or enemas. Abnormal shadows in the ordinary roentgenogram may be suggestive. Negative roentgenologic observations may be due to temporary reduction of the hernial contents. Operation for repair may be through a laparotomy or thoracotomy approach, or through a combination of the two. In the majority of cases the hernia

may be reduced and repaired by any one of these routes. There are special advantages, limitations and indications for each, depending on the anatomic and clinical type of hernia. Special procedures for the closure of large or recurrent hernias include muscle and fascia plastic operations, shifting of the attachment of the diaphragm and thoracoplasty in special cases. Differential pressure anesthesia is essential to obviate the dangers of open pneumothorax during operation, and inflation of the lung before closing the pleural cavity and aspirating the air later to restore the normal vital capacity of the opposite lung and to reinflate the lung on the side of the hernia. Respiratory insufficiency, especially in infants, intestinal obstruction and postoperative shock are the most common causes of death.

**Complicating Lesions of Appendicitis**—According to Royster, first and foremost of all the complicating lesions of appendicitis stands peritonitis. It follows directly on perforation or gangrene of the appendix. The upper abdominal conditions most frequently associated with a pathologic appendix are gastric and duodenal ulcer, gallbladder infection and pancreatic disease. They constitute a vicious circle. Undoubtedly long continued infection of the appendix may lead to definite pathologic changes in the liver, infiltration around the radicles of the portal vein with degeneration of the cells and in the chronic or more severely acute forms infiltration also around the biliary radicles with surface markings of interstitial hepatitis. Inflammation of the portal vein or any of its branches is always a serious complication, and usually fatal. Unless thrombi or abscesses occur, there may be some hope. A quieting complication is a subdiaphragmatic, or subphrenic, abscess. Acute gangrenous or suppurative appendicitis is responsible for the great majority of the cases. The abscess rarely forms before the eighth or tenth day. In toxic appendicular nephritis the only sign is albuminuria, seen in the rapidly progressive types of acute appendicitis and disappearing promptly after operation. There is no general edema and the albumin may be scanty. Hemorrhages from the stomach, genito-urinary tract or the intestine if not due to associated organic diseases in the regions named, must be regarded as toxic in origin. Hematemesis may be a part of the toxic syndrome of appendicitis, most frequent in the so-called chronic type, but seen at times in the acute types, especially of the gangrenous form. Hematuria is not uncommon in cases of appendicitis associated with acute hemorrhagic nephritis, and in cases of contact—an inflamed appendix adherent to the kidney, ureter or bladder. Bleeding from the bowels may accompany appendicitis complicated by diarrhea with mucous discharge or come from a toxic ulceration of the colon in the form of copious hemorrhages. The author concludes that the pathologic complications of appendicitis may themselves prove to be more troublesome and more deadly than the local lesions in the appendix. The possibility of their occurrence and the realization of their danger must be kept in mind. It is the complications that kill.

**Calcified Abdominal Lymph Node**—Occasionally one wishes to distinguish between a stone in the midportion of the ureter and a calcified lymph node in the abdomen without ureteral catheterization. Floyd and Pittman have recently devised a method to do this in selected cases. A roentgenogram of one of their patients showed a shadow, about 1 cm in diameter, just below the crest of the ilium in line with the right ureter. A second roentgenogram was taken after pushing the abdominal contents over and holding them in place with both hands. This showed the shadow, along with others on the opposite side of the spinal column, demonstrating that it was not a stone in the ureter but most likely a calcified node in the abdominal cavity. At operation the authors found an acute exacerbation of a chronically inflamed appendix and calcification of the ileocolic lymph nodes.

## United States Naval Med. Bulletin, Washington, D C

31 1 102 (Jan) 1933

- Expiratory Force as Related to Submarine Escape Training C W Shilling—p 1
- Vital Capacity and Its Relation to Chest Expansion C W Shilling—p 7
- Traumatic Lung Lesions Produced in Dogs by Simulating Submarine Escape. B H Adams and I B Polak.—p 18
- Duties of Medical Officer Afloat United States Navy J W Vann—p 21

# FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Medical Journal, London

1 87 128 (Jan 21) 1933

- Observations on Exophthalmic Goiter W H C Romanis—p 87
- Three Recent Cases of Encephalitis Lethargica P Frazer introductory note by A S Barnes—p 90
- Pain Referred to Ear E Watson Williams—p 92
- Latent Mastoid as Cause of Chronic Aural Sepsis G Chubb—p 94
- Treatment of Chronic Aural Suppuration with Iodine Powder R S Stevenson—p 95
- Relationship of Syphilis and Yaws D B Blacklock—p 97
- Mumps and Appendicitis J Donnelly and J B Oldham—p 98

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- Sight Saving Glasses. N B Harman—p 129
- Prevention of Polomyelitis S Flexner—p 132
- Treatment of Recent Injuries W E Tucker—p 135
- Phagocytic Reaction in Hay Fever D Harley—p 138
- Recovery from Pneumococcal Meningitis. Notes on Case Treated by Felton's Serum J McAuley and F M Hilliard—p 139
- Segmental Hyperalgesia Associated with Hemoptysis A I G McLaughlin—p 140
- Acne Vulgaris Symptom Not a Disease P B Mumford—p 141

**Phagocytic Reaction in Hay Fever**—In the course of examining films of *Phleum pratense* pollen stained with iodine, Harley observed a granular appearance of the substance of the grain. He prepared suspensions of these granules for phagocytic tests. The phagocytic index was determined in twenty-four normal and non-hay fever patients and in twenty-five hay fever cases. "Chiastic" counts were made in five cases. In twenty-three of the twenty-four non-hay fever bloods nearly all the granules were found to have been dissolved, the few remaining being recognizable inside the leukocytes. The phagocytic index was low, the average being 0.4. In twenty-two hay fever cases the index was comparatively high, and in addition there were certain numbers of granules unphagocytosed, the average index was 2.4. In three cases the indexes were normal or only slightly raised. The high indexes were from severe hay fever cases, but the converse did not always apply. All hay fever patients gave positive skin tests to *Phleum*, *Dactylis* and *Holcus*.

## International Journal of Psycho-Analysis, London

14 1 182 (Jan) 1933

- Phallic Phase. E Jones—p 1
- Homosexuality in Women Helene Deutsch—p 34
- Denial of Vagina. Contribution to Problem of Genital Anxieties Specific to Women Karen Horney—p 57
- Question of Prognosis in Narcissistic Neuroses and Psychoses L P Clark—p 71
- Family Reactions During Analysis of Case of Obsessional Neurosis Marjorie E Franklin—p 87

## Irish Journal of Medical Science, Dublin

No 85 1-48 (Jan) 1933

- Study of Structure and Vascular Conditions of Human Corpus Luteum in Menstrual Cycle and in Pregnancy Nimian McIntire Falkner—p 1
- Disinfection of Water by Catadyn Process J W Bigger and L L Griffiths—p 17
- Premedication with Nembutal R W Shaw—p 26
- Observations on Use of Sodium Amytal and Nembutal O J Murphy—p 38
- Biology for Medical Students J B Gatenby—p 41

## Journal of Hygiene, London

33 1 150 (Jan) 1933

- Bacteriologic Analysis of Winkles (*Littorina* Spp.) as They Arrive in Market. J Eyre—p 1
- Dissimilarity of Results of Precipitin Titrations Performed with Constant Amount of Antiserum and with Constant Amount of Antigen C L Taylor—p 12
- Use of Pressure Steam Disinfectors for Disinfestation and Disinfection by Dry Heat and/or Gaseous Disinfectants. J du P Langrishe—p 23
- Hemoglobin Concentration of Normal English Males and Females C E Jenkins and C S Don—p 36
- Milk Pasteurization as Technical Problem W G Savage—p 42
- Miscellaneous Studies on Iodine and Goiter Problem in New Zealand C E Hercus and H A A Aitken—p 55
- Physical Measurements of Adolescent Schoolboys in Relation to Scholastic Attainment and Prowess in Games and Sports A A Mumford—p 80
- Inoculation Experiments with *Bacillus fusiformis* Isolated from Tropical Ulcer with Observations on *Bacillus* E C Smith—p 95

- Studies on Survival Time of Bovine Tubercle Bacillus in Soil Soil and Dung in Dung and on Grass with Experiments on Preliminary Treatment of Infected Organic Matter and Cultivation of Organism E C G Maddock—p 103
- Influence of Static Effort on Respiration and on Respiratory Exchange T Bedford H M Vernon and C G Warner—p 118

## Journal of Pathology and Bacteriology, Edinburgh

38 1 199 (Jan) 1933

- Familial and Bilateral Tumors of Carotid Body W H Chase—p 1
- Significance of Nerve Fibers in Human Malignant Neoplasms G M Ryne—p 13
- Experimental Liver Disease Produced by Roentgen Ray Irradiation of Exposed Organ A Bolliger and K Inglis—p 19
- Pathologic Action of Light III "Light Stroke" and Its Relation to Heat Stroke A G Levy—p 31
- Neoplasms in Fish. Report of Six Cases with Summary of Literature A Haddow and Isobel Blake—p 41
- Filtration of Herpes Virus Through Graded Collodion Membranes W J Elford J R Perdrau and W Smith—p 49
- Production of Immunity to Vaccinia Virus by Mixtures of Immune Serum and Virus and Importance of Phagocytosis in Antivaccinal Immunity R W Fairbrother—p 55
- Observations on *Salmonella* Agglutination and Related Phenomena P B White—p 65
- Species Immunity to *Pneumococcus* H B Day—p 77
- Production of Staphylococcal Hemolysin with Observations on Its Mode of Action J W Bigger—p 87
- \*Reticulo Endotheliomatosis Ovarian Endothelioma and Monocytic (Histiocytic) Leukemia R Gittins and J C Hawksley—p 115
- \*Sarcosporidiasis in Human Cardiac Muscle J A Hewitt—p 133
- Production of Tumors in Fowl by Carcinogenic Agents (1) Tar (2) 1 2 5 6 Dibenzanthracene-Lard P R Peacock—p 141
- \*Pulmonary Tuberculosis with Bovine Type of Bacillus in Sputum Fourteen New English Cases W M Cumming and W M Foster with report of two autopsies by R O Girdwood and addendum on bacteria by A S Griffith—p 153
- Incidence and Correlation with Clinical Severity of Gravis Mitis and Intermediate Types of Diphtheria Bacillus in Series of Five Hundred Cases at Leeds J S Anderson K E Cooper F C Happold and J W McLeod—p 169

### Ovarian Endothelioma and Monocytic Leukemia—

Gittins and Hawksley describe in detail a case of bilateral ovarian endotheliomas in an infant aged 1 year. This resembled a reticulo endotheliomatous process not heretofore recorded. The neoplasms though extirpated were followed by general reticulo-endotheliosis with the blood picture of histiocytic leukemia and a high lymphocytosis of normal type. In reviewing the literature the authors observed that endothelioma of the ovary is a rare condition and several varieties are recognized, their case being somewhat different from those previously recorded. Including the one they describe only twenty histologically authenticated cases of monocytic (histiocytic) leukemia are reported. The observation of focal neoplasia (ovarian endotheliomas) and general (histiocytic) leukemia in the same patient within a few weeks is offered by the authors as evidence of the essentially neoplastic nature of this type of leukemia.

**Sarcosporidiasis in Cardiac Muscle**—Hewitt describes the histologic features of a specimen of normal cardiac muscle observed at the postmortem examination of a young woman who died as the result of an accident. After routine fixation in tap water formaldehyde the pieces were stained in bulk with Ehrlich's hematoxylin counterstained with eosin dehydrated, cleared, and embedded in paraffin. When the author had occasion to employ the material for teaching purposes, he noted the presence of abnormal structures. They were recognized as a sarcosporidial infection. The principal features were (1) heavy infection in true muscle and in Purkinje's tissue (2) uniformity in the size of the cysts (3) well marked delimitation of the cyst wall into layers (4) profuse trabeculation dividing the cyst into loculi, (5) presence of a few sporoblasts peripherally and many spores centrally (6) absence of degenerative changes toward the center of the cyst, (7) semicircular shape of the spores, (8) presence of a nucleus and a doubtful nucleolus, (9) presence of acidophil and basophil granules, these being generally situated terminally, (10) normality of the surrounding cardiac muscle, and (11) normality of the adjacent Purkinje's tissue.

**Tuberculosis with Bovine Type of Bacillus in Sputum**.—Cumming and Foster present their method for the isolation and identification of tubercle bacilli of the bovine type from fourteen cases of pulmonary tuberculosis. It is as follows: A morning specimen of sputum is collected and an equal quantity of one normal sodium hydroxide solution is mixed with it for thirty seconds and centrifugated at 2,000 revolutions per minute for twenty minutes. If the specimen is more than usually

viscous, the mixture is incubated at 37 C for twenty minutes before centrifugating. The supernatant fluid is decanted the deposit is then roughly neutralized with three or four drops of normal hydrochloric acid solution, mixed and seeded on four slopes of egg medium. The tubes are incubated, examined weekly and discarded in three months if no growth is obtained. In the few instances in which the sputum is 'positive' on microscopic examination and yet no growth is present or in which although microscopic and cultural examinations are negative the clinical evidence strongly suggests that tubercle bacilli may be present in small numbers the reverse method of concentration is employed, hydrochloric acid being used as the concentrating reagent and sodium hydroxide for neutralizing. From the 384 cases of pulmonary tuberculosis, twenty-two bovine strains were isolated. In any given case of pulmonary tuberculosis, the presence of tubercle bacilli of the bovine type seems to be of definitely unfavorable prognostic significance. The authors point out that the possibility of the occurrence of human-to-human and of human-to-bovine infection with the bovine type of the tubercle bacillus becomes increasingly more difficult to ignore. At the necropsy in two of the cases they observed that the route of infection was alimentary and that the lung lesion was indistinguishable from that due to the human type.

### Lancet, London

1: 123 176 (Jan 21) 1933

- Migraine M Critchley and F R Ferguson—p 123  
Tuberculosis in Childhood Its Etiology and Prognosis as Shown by Stomach Lavage Method of Obtaining Tubercle Bacilli. W R F Collis and C F Brockington—p 127  
High Blood Pressure The Problem of Its Control C B Rossiter—p 132  
Immunization of Maltese Goat by Means of Cutaneous Vaccination T Zammit and J E Dehono—p 134  
Lymphadenoma with Relapsing Pyrexia Case Associated with Erythremia D Hall—p 136  
Spontaneous Subarachnoid Hemorrhage Congenital Intracranial Aneurysm M E. Shaw—p 138  
Hypodermic Injection Outfit in Private Practice W E. Waller—p 139

1: 177 232 (Jan 28) 1933

- Anesthesia for Eutocia F Roques—p 177  
\*Migraine. M Critchley and F R Ferguson—p 182  
Observations on Gallstone Cases E R Flint—p 187  
Dysentery as Cause of Sudden Death Eileen Harvey—p 190  
Tuberculous Laryngitis Importance of Early Diagnosis H Barwell—p 191

**Migraine**—Critchley and Ferguson state that migraine may be due to bilious, ocular, menstrual, cerebral or allergic factors. Despite an immense amount of research the essential causation remains obscure. It seems certain that there must be at least two factors, central and "peripheral." They are inclined to regard migraine as a vasomotor manifestation associated with spasm of the cerebral arteries, most commonly the branches of the internal carotid due to stimulation of the sympathetic fibers either as the result of direct pressure or by way of the endocrine system occurring in a susceptible person with the migrainous constitution and with precipitating factors. Success in treatment will depend on the ability to place a particular case of migraine in its proper category and to apply the appropriate remedy. The complete investigation of a patient with migraine will include (1) a careful previous and family history and a minute study of the symptomatology (2) physical and psychologic examination (3) careful testing for ocular abnormalities, (4) roentgen examination of sinuses, sella turcica, gallbladder and gastro-intestinal tract (5) full examination of the cerebrospinal fluid including pressure readings (6) biochemical investigations (blood sugar estimation, urine alkali reserve) and (7) basal metabolic rate investigation. It is useless to try to fight off an attack; therefore the authors recommend retirement to a quiet darkened room as soon as possible, and the administration of 6 grains (0.4 Gm) of an amideopyrine-barbital preparation repeated in half an hour or 15 grains (1 Gm) of acetphenetidin and 5 grains (0.3 Gm) of caffeine citrate to be repeated, if necessary, at hourly intervals for three doses. Between the attacks some cases may be suitably treated with magnesium sulphate, dextrose and bile acids, theelin, thyroid special diet or psychotherapy. For the severe cases that do not respond to conservative measures, the authors recommend a right subtemporal decompression.

1: 233 286 (Feb 4) 1933

- \*Treatment of Burns and Scalds with Especial Reference to Use of Tannic Acid. P H Mitchiner—p 233  
Idiopathic Aplastic Anemia Analysis of Four Cases F G Lescher and D Hubble—p 239  
New Form of Bed Tent for Administering Oxygen and Carbon Dioxide. E P Poulton with account of clinical oxygen measuring pipet by E P Poulton and J W Shackle—p 244

**Treatment of Burns**—Mitchiner points out that, under the old bath and grease treatment, the average mortality was 39.6 per cent for burns and 18.8 per cent for scalds. In the early days of the trinitrophenol treatment the mortality was 39.7 per cent for burns and 7 per cent for scalds, and in the last five years of the trinitrophenol treatment the mortality was 15.5 per cent for burns and 7.5 per cent for scalds, whereas the adoption of tannic acid in October 1928 and its systematic use in subsequent years has reduced the mortality to 4 per cent for burns and 1.7 per cent for scalds. The author adds that during the period from 1929 to the present time, when tannic acid compresses have been used as the routine outpatient treatment for all burns and scalds, no deaths have occurred among the slighter cases, which average 800 a year and of which about one third are children under 10 years of age. There is, however, a seasonal incidence of approximately 3.2 during the winter months. The treatment of burns and scalds, following adequate cleansing of the damaged area, aims at lessening collapse by stopping the absorption of the bodies that cause this collapse and death in from twelve to forty-eight hours after the burn, and also at diminishing the loss of fluid from the burned area which is so serious and so often fatal in the first six to twelve hours. A further aim is the prevention of toxemia from absorption of septic material from the infected burned area which may be manifested elsewhere, especially as septic bronchopneumonia and cause death in from five to twelve days. The initial shock and suffocation cannot be affected by local treatment of the burned area, and the percentage of death from these causes can be ameliorated only by efficient first aid treatment by those present at the time of injury. The author believes that a stock solution of 2 per cent tannic acid and 1/2,000 corrosive mercuric chloride adequately fulfils the needs of the compress method. In order to meet the desirability of applying this solution warm to the burned area it is his custom to keep it in a concentrated form and dilute it with the requisite amount of warm water. He does not advise keeping it at more than double strength as he finds that more concentrated solutions are inclined to decompose more quickly and the results obtained are therefore not as painless or as satisfactory as those given by the weaker solution. In order to meet the requirements of shops and the home, where burns are not frequent, he compounded a tablet containing 17 1/2 grains (1.14 Gm) of tannic acid, 1/2 grain (0.032 Gm) of corrosive mercuric chloride and 1 grain (0.065 Gm) of boric acid (excipient) which tablet dissolved in 2 ounces (60 cc) of water gives a solution of the necessary strength though slightly muddy in appearance owing to the presence of the boric acid which however does not interfere in any way with its efficacy of coagulation. It can be used equally well for spraying when this method is preferred.

### South African Medical Journal, Cape Town

7: 132 (Jan 14) 1933

- \*Primary Purpura in Childhood M Witkin—p 3  
Headaches R Geerling—p 9  
Laboratory Aid in Public Health Administration J Pratt Johnson—p 10  
When Should the General Practitioner Operate? A Van Der Poel—p 13

7: 33 68 (Jan 28) 1933

- Concentrated African Antivenom Serum Its Preparation Standardization and Use in Treatment of Snake Bite E Grasset—p 35  
Recent Advances in Diagnosis and Treatment of Diabetes Mellitus P Bayer—p 39  
Ophthalmia Neonatorum. A. T. Thurston—p 42

**Purpura in Childhood**—Witkin points out that primary purpura is an uncommon disorder of childhood. In seven and a half years only eight cases were recorded in the Transvaal Memorial Hospital for Children. The sex incidence was equal. The etiologic factor is still unknown. Probably there is some bacterial or biochemical agent acting on the thrombopoietic system and endothelium of the capillary walls. A blood count

and Wassermann test should precede all other investigations. The diagnosis of purpura hemorrhagica is made on a history of recurrent hemorrhages, a low platelet count, prolonged bleeding time, and delay in clot retraction. The treatment is mainly symptomatic. Drugs are on the whole disappointing. Of these, epinephrine is one of the most valuable. Every effort should be made to eradicate a septic focus. The mild cases recover promptly with rest, avoidance of exposure and injury. Protein therapy, blood transfusions, serum therapy and roentgen irradiation of the spleen have but a limited sphere of usefulness. Splenectomy is the treatment *par excellence* in the chronic recurrent types. The author reports one case of splenectomy. Ligation of the splenic artery is the operation of choice in the severe acute forms, in which splenectomy may terminate fatally.

### Archives des Maladies du Cœur, Paris

20 153 248 (March) 1933

- Influence of Experimental Asphyxia on Heart C Laubry J Walser and L Deglaude—p 153  
Incomplete Auriculoventricular Dissociation with 2:1 Rhythm with Anticipation of Blocked Auricular Wave E Doumer—p 172  
Chronaxia and Modifications of Rapid Phase of Ventricular Electrocardiogram A van Bogaert—p 185  
New Aspect of Question of Cardiac Hormones Muscular Extracts in Cardio-Arterial Therapy P N Deschamps—p 223

**Muscular Extracts in Cardio-Arterial Therapy**—After reviewing briefly the various trends of investigation concerning so-called cardiac hormones, substances regulating the cardiac automatism, Deschamps discusses the cardiovascular action of the extracts of peripheral muscles which have been prepared notably by Schwartzmann and by Fahrenkamp and Schneider. These extracts act less on the heart than on the vessels, especially the coronary vessels and their action is above all vasodilatory. They constitute a medication for arterial spasms and its manifestations, essentially for angina pectoris and intermittent claudication from thrombo-arteritis and in a measure, hypertension. The best results are obtained in the particularly spasmodic forms of angina pectoris, while forms in which organic changes dominate, especially cardiac insufficiency with dilatation of the heart or coronary thrombosis, give uncertain results or none at all. According to Drucker the extracts are indicated in the so-called ambulatory forms, in which walking is suddenly arrested by violent retrosternal oppression while the collapse and anguish are often lacking, the toxic forms and the vasomotor forms. In addition to their vasodilatory and antispasmodic action, some authors claim a cardiotonic and cardioregulating action for these extracts. Favorable results have been reported especially in cardiac decompensation and arrhythmia. The author compares the action of these extracts with digitalis and with hepatic and pancreatic extracts. The muscular extracts are usually administered orally but may be given intramuscularly, they have been given intravenously, primarily for disturbances of rhythm. Investigations indicate that the active substances in the muscular extracts are probably proteins similar to amino acids. Adenine nucleotides, adenine pentoside and adenosine triphosphoric acid are among the substances that have been isolated from the extracts by various authors.

### Nourrisson, Paris

21 65 128 (March) 1933

- \*Prandial Diarrhea in Breast-Fed Infants A B Marfan—p 65  
Infection and Reinfection in Nurslings L Ribadeau Dumas and Rault—p 79  
\*Drop of Milk Municipal Institute of Puericulture of Soerabaya (Java) D P R Keizer—p 94  
Recent Changes in Preparation of Condensed Milk G Blechmann—p 101

**Prandial Diarrhea in Breast-Fed Infants**—Marfan discusses prandial diarrhea of breast-fed infants. Its distinguishing characteristic is the evacuation of stools toward the end of or immediately after each feeding. It usually starts in the first two weeks and recedes spontaneously about the fourth month. The stools are usually mucogrumose but may become liquid both of which have a normal odor and reaction. Frequent eructations and regurgitations occur in prandial diarrhea and sometimes the evacuations are preceded by slight colics. In the severe forms the nutrition and weight increase may be disturbed. There are no serious complications. Prandial diarrhea is practically limited to breast-fed infants. It is not due to the bad quality of the milk ingested but to a special sensi-

tivity of the infant's digestive tract to all human milk, to that of certain women (usually including its mother), or to that of its mother only. When the milk enters the stomach and the duodenum, exaggerated duodenobiliary and gastrocolic reflexes are produced and the violent peristaltic contractions result in an evacuation of the intestine. This special sensitivity is attributed by Alarcon to an exaggeration of the hyper-vagotonia of the new born by Weill to an anaphylactic state. The first step of the treatment should be to ascertain that the nursing periods are well regulated and that the mother's diet is correct. In the light forms nursing at the breast should be continued and belladonna and bismuth subnitrate administered to calm the hyperexcitability of the digestive tract. A daily enema with a warm decoction of marshmallow root with a half teaspoonful of sodium bicarbonate is advised. In severe forms or in forms that persist despite this treatment the same medication should be given and in addition mixed feeding should be instituted. If the infant is less than 2 months of age, one breast feeding daily is replaced by a bottle of unsweetened buttermilk or unsweetened condensed milk if the improvement is not sufficient, two breast feedings may be replaced by bottles. If the nursing is more than 2 months of age, the buttermilk or condensed milk is diluted with a decoction of rice instead of pure water. When the diarrhea disappears exclusive breast feeding may be resumed. If it reappears, one may return to mixed feeding. It is rarely necessary to replace breast feeding entirely by artificial feeding and it should be deferred as much as possible.

**Infection in Nurslings**—In a general discussion of infections in nurslings Ribadeau Dumas and Rault state that they are usually represented by a triad of symptoms always present in varying degrees: modifications of the thermal curve of the weight curve and of the stools. In the nursling the first infection is always benign. It is marked by a general slight thermal elevation, arrest of growth and slight digestive disturbances. This syndrome is reproduced at the moment of reinfection, but it is always much more pronounced. At this point the drop in weight more than the degree of fever indicates the gravity of the infection. The severity of the syndrome of reinfection depends on the degree of passive immunity transmitted by the mother or of acquired immunity of the nursling. In the course of recurrent infections the temperature and weight curves reach their maximum when the passive immunity is disappearing and the active immunity is beginning to be acquired. This is generally in the third quarter of the first year. The temperature curve, which exhibits higher and longer elevations at each attack or a progressive decrease in the height and duration of the elevations, is a guide to favorable or unfavorable prognosis. The weight curve is even more significant from this point of view. In nurslings one type of infection exhibits many clinical forms, varying from the silent to the gravest forms.

### Paris Medical

1 213 228 (March 11) 1933

- \*Fifth Disease or Epidemic Megalerythema L Tanon M Cambessedès and L Lind—p 213  
Accidents of Spinal Anesthesia R H Martin and P Halbron—p 217  
Radon in Weak Doses in Daily Therapy S Bernard—p 220  
\*Treatment of Melitococcosis by Neosarsphenamine J Vidal—p 223

**Epidemic Megalerythema**—Tanon and his associates discuss the differential diagnosis of megalerythema. The erythema makes its first appearance as rose colored macules occurring on both cheeks. These merge so rapidly that the macular stage is often unnoticed and the first sign to attract attention is a diffuse redness spreading over both cheeks. The stage of confluence is followed within a few hours or days by a stage of involution. From one to four days after the appearance of the erythema on the face, it appears on the extensor surface of the forearms, stopping at the wrists but spreading to the upper arms. The buttocks and antero-external surface of the lower extremities are also affected the trunk but rarely. The three stages of evolution are best seen on the forearm. The confluence of the macules into erythematous spots of the size of a palm is characteristic of the disease. In the involution stage the spots pale progressively, and often the centers pale while the borders remain rose, producing characteristic circinate figures, which are found in all typical cases of megalerythema.

The eruption may exist in different stages in different parts of the body giving it a polymorphic character. One of its essential features is its alternate attenuation and accentuation. The disease lasts about ten days. It is benign apyretic and without complications, therapy is useless. Megalerythema is distinguished from rubella by the confluence of the macules, the gradual evolution of the erythema and its persistence and reviviscence, the absence of adenopathies and a more benign general condition. Megalerythema may be confused with the erythematopapulous type of erythema multiforme. Erythema multiforme usually starts on the extremities instead of on the face and affects the backs of the hands and feet, its papules being elevated and infiltrated. Megalerythema is contagious and often epidemic, while erythema multiforme is probably not contagious. The only modification of the leukocytic formula in megalerythema is a slight eosinophilia; in rubella there is a hyperleukocytosis and increase in plasma cells, while erythema multiforme sometimes shows a slight leukocytosis.

**Treatment of Melitococcosis by Neoarsphenamine**—Vidal has found neoarsphenamine efficacious in the treatment of melitococcosis six out of eight cases having been favorably influenced by this therapy; one case was refractory to treatment and in one case treatment was interrupted too early to determine the results. At first the neoarsphenamine was administered intravenously in doses progressing gradually from 0.15 Gm to 0.6 Gm given once a week. Later the initial dose was raised to 0.3 Gm and the injections were given twice weekly, the maximum dose often not exceeding 0.45 Gm. The average total dose employed was from 2.5 to 3.5 Gm. Each injection is usually followed by a sudden drop in temperature after which the febrile wave continues at a lower level until the temperature returns to normal. Injections given when the patient is almost apyretic sometimes produce slight thermic elevations (less than 1 degree) which the author regards as reactivation phenomena; they soon disappear. Injections should be continued until a stable apyrexia is obtained. The injections were usually started from one to two months after the beginning of the disease. In all but one case, cure was obtained within from one to three weeks after the first injection, the total duration of the disease varied from thirty-seven days to three months, but usually it was considerably less than three months. In one case it required twenty-five days to bring about defervescence and forty days to bring about complete thermic stability, but even in this case the total duration was only two months.

### Archiv für Gynakologie, Berlin

152:447-691 (Feb. 22) 1933

- \*Crodol Method of Measuring Labor Pains. E. Frey and Doris Wenner—p. 447
- Cause of Onset of Labor. O. L. E. de Raadt—p. 467
- \*Late Disturbances of Functions of Liver and Reticulo-Endothelial System After Eclampsia. F. G. Dietel and A. Polak—p. 469
- Demonstration of Organic Iodine in Blood and Its Role in Normal and in Toxic Pregnancies. H. Eufinger and W. Schulte—p. 479
- Ovarian Function and Calcium Metabolism. O. Bokelmann—p. 492
- Degrees of Acidity of Vaginal and of Cervical Secretions. A. Bock and L. Wolf—p. 501
- Myelitis and Spinal Cord Lesions in Their Relation to Pregnancy and Labor. W. Spitzer—p. 517
- Reciprocal Action Between Ovary and Anterior Lobe of Pituitary Gland. A. von Schulz—p. 529
- Experimental Studies on Artificial Premature Sex Ripening. A. von Schulz—p. 537
- Effect of Puerperal Exercises on Biologic Changes and Types of Involution. A. Bronnikowa, B. Azietzky, A. Welshewa, Z. Kowtun, A. Szulmowa and F. Chanina—p. 548
- Glycogen and Fat Content of Liver in Pregnant Albino Rat. Contribution to Question of Carbohydrate Metabolism During Pregnancy. O. Bokelmann and W. Scheringer—p. 562
- Pathology and Symptomatology of Adenomyosis. H. O. Neumann—p. 579
- Structural Genesis of Vaginal and Uterine Malformations. Erna Vilas—p. 655
- Effect of Roentgen Irradiation on Blood Gases and Alkali Reserve in Cancer Patients. A. Gremme—p. 667
- Content of Parovarian Cysts. K. Dierks and M. Becker—p. 679

**Measuring Labor Pains**—Frey and Wenner made observations on twenty-eight parturient women in the Zurich clinic, utilizing Crodol's apparatus for the measurement of labor pains. By means of his apparatus, which is built on the principle of a tonometer, Crodol states that he is able to determine the force of an individual uterine contraction and estimate the working capacity of the uterus. Crodol proceeds on the assumption

that the muscle possesses two properties, stiffening and thickening, appreciable on palpation. Stiffening represents the force and thickening the lifting power. The amount of work the uterus is capable of is represented by the formula: force times lifting power. The authors state that the data obtained by them in the twenty-eight parturient women possessed no clinical value. Four groups were considered separately: (1) primiparas, (2) multiparas, (3) those with premature rupture of the amniotic bag and (4) those without premature rupture of the bag of waters. The authors state that no relationship could be established between the determined contractile force and the number of contractions required in a given case to complete the first or the second stage of labor. Moreover, the method failed to throw any light on the question of the relation between the size of the child, the size of the pelvic outlet or of the cervical canal, and the fact that in one case the stage of dilatation or the stage of expulsion required more contractions than in another. The authors conclude that Crodol's method is of no value in prognosticating the progress of labor.

**Liver and Reticulo-Endothelial System After Eclampsia**—Dietel and Polak point out that, in the past, studies of eclampsia have been principally concerned with kidney disease. In spite of the manifest importance of the liver in toxemias of pregnancy, this organ has received but little attention. More recent researches have established a pathologic bilirubinemia in acute eclampsia. The finding of a positive van den Bergh sign has been considered indicative of particularly severe damage to the liver. The authors investigated the question of persisting liver damage in post eclamptic women. The following tests were used: (1) bilirubin functional test, (2) levulose tolerance test and (3) the storing capacity of the reticulo-endothelial system for congo red. The Hijmans van den Bergh quantitative test was used and a retention of 15 per cent of the injected bilirubin at the end of three and one half hours was considered pathologic. At the same time an independent study was made of the subjective complaints as well as of the frequency of disorders of the liver and of the biliary tract after eclampsia. A follow-up study was made of eighty-four post eclamptic patients. Of these, twenty-nine were examined; twenty-two made replies to a questionnaire and thirty-three failed to reply. The functional tests demonstrated that the storing capacity of the reticulo-endothelial system remained impaired up to nine years later. Latent icterus was demonstrable six years later, while levulose tolerance remained diminished four years later. These rather frequent observations of liver insufficiency were not demonstrable by urinalysis. Weakness was the most prominent subjective complaint and was present in twenty-eight of fifty-seven cases investigated. Backache, headache and cardiac symptoms were likewise complained of. Thirteen women developed gallbladder disease. The authors conclude that the liver suffers more damage in eclampsia than do the kidneys.

### Deutsches Archiv für klinische Medizin, Berlin

175:112-128 (Feb. 20) 1933

- Absolute Tests of Gastric Function in Healthy Persons and in Patients with Ulcer. P. Martini and K. P. Becker—p. 1
- \*Glycine Treatment of Progressive Muscular Dystrophy. Origin of Creatine. S. Kostakow and A. Slauck—p. 25
- Pulmonary Emphysema from Bronchial Inflation of Lung. A. Engelhard—p. 38
- \*Clinical Aspects and Roentgenology of Cardiac Thrombi. F. Besser and C. Schilling—p. 50
- Azotemias in Weil's Disease and in Blackwater Fever. M. Georgopoulos—p. 60
- \*Observations in Case of Diabetes Insipidus et Mellitus. G. A. Lindeboom—p. 74
- Potassium Content of Blood Serum During Cardiac Stasis and Follow-up Elimination of Edema. H. G. Scholtz—p. 90
- Heredity of Pernicious Anemia and Observations on Uniovular Twins. H. Frank—p. 96
- Investigations on Carbon and Nitrogen Content of Human Sweat. K. Voit—p. 108
- Symptomatology and Diagnosis of Rupture of Aorta and of Dissecting Aneurysm. R. Pannhorst—p. 115
- Diagnostic Use of Peptolytic Ferments in Transudates and Exudates. J. Ammerschlager—p. 124

**Glycine Treatment of Progressive Muscular Dystrophy**—Kostakow and Slauck report their observations on the effects of oral administration of glycine in seven patients with muscular dystrophy and in four persons without this

**disorder** In the seven patients with muscular dystrophy they noted that the creatinuria was increased by several times its initial value. Parallel with this went a decrease in the absolute elimination of the preformed creatinine. After approximately four weeks the creatine elimination again reached its initial value and the metabolism approached normality. It seems that the phosphagen content of the muscles can be influenced with this amino acid. Whether, besides influencing creatine formation, glycine exerts yet other influences remains as yet undecided. On the basis of their metabolic studies, the authors conclude that muscular dystrophy results from the loss of the capacity to utilize creatine. Under the influence of glycine, the organism regains this capacity and the metabolism becomes normal.

**Cardiac Thrombi**—Besser and Schilling discuss the clinical aspects of thrombi of the heart on the basis of cases reported in the literature and of cases of their own observation. They show that the clinical manifestations depend on whether the thrombus is located in the right or in the left heart, whether it is a free thrombus, and whether it is pedicled or mural. Cardiac thrombi are, as a rule, more frequent in the auricles than in the ventricles. The authors discuss the roentgenologic visualization of the thrombi of the heart and the diseases of the neighboring organs which are important in the differential diagnosis. They emphasize particularly that now cardiac thrombi will be more often recognized than was formerly the case, and that this is primarily owing to roentgenoscopy eventually with the aid of kymography. However, it is necessary that the clinician and the roentgenologist cooperate, for in many instances the roentgenologic verification of the diagnosis is not possible without an exact knowledge of the clinical data.

**Diabetes Insipidus and Mellitus**—Lindeboom relates the clinical history of a woman who had suffered from diabetes insipidus for several years and then developed diabetes mellitus. The author discusses several problems connected with this rare combination. He admits that, in the reported case, responsibility for the diabetes may be imputed to hypophyseal influences, which by way of the nervous regulation of sugar metabolism from the base of the third ventricle exerted an influence on the liver. But in view of the insular aspect of the disturbance of the sugar metabolism this does not seem so probable. The author is inclined to regard the condition as a pluriglandular disturbance of syphilitic origin although a connection between the different functional disturbances is not perceptible. However, he considers the regular menstruation at the age of 55 additional evidence for an anomaly in the internal secretions of the patient. He shows that salyrgan has a diuretic effect in diabetes insipidus and that it is also capable of increasing the sodium chloride concentration of the urine to values that are extraordinarily high for diabetes insipidus.

### Jahrbuch für Kinderheilkunde, Berlin

138 249 372 (March) 1933

- \*Roentgen Irradiation in Tuberculous Meningitis C Wiener—p 249  
Is there a Method of Choice for Treatment of Hypertrophic Pylori stenosis? H Willi—p 259  
Mineral Content of Blood of Children During First Year of Life. J A Kotikoff—p 280  
Significance of Influenza and of Pneumococcal Infection as mixed Infection in Scarlet Fever Helene Ssawimowitsch and W D Zinslerling—p 319  
Experiences with Intubation M Hohlfield—p 334  
\*Therapeutic Use of Weed's Experiment in Canal Blockage in Cerebrospinal Meningitis W Mikulowski—p 347

**Roentgen Irradiation in Tuberculous Meningitis**—Wiener was induced to employ roentgen therapy in tuberculous meningitis by von Bokay's report, stating that five of seventeen patients with tuberculous meningitis had recovered as the result of roentgen irradiation. He followed the suggestions of von Bokay and administered comparatively high doses. The description of the nine cases in which the author employed roentgen treatment reveals that irradiation was never effective. Moreover, he does not even consider the method free from danger, because he always noted an exacerbation of the process after the first irradiation and he had the impression that death had been hastened by this treatment. In trying to explain the discrepancy between his own unfavorable results and the results obtained by von Bokay, he points out that von Bokay's cases

were all comparatively new, while his were somewhat advanced. Nevertheless, he has now completely abandoned the roentgen treatment of tuberculous meningitis.

**Therapeutic Use of Weed's Experiment in Meningitis**—Mikulowski relates the clinical history of a boy, aged 11, noteworthy because the patient had had chronic cerebrospinal meningitis for more than a year and had not been given any medical treatment. Five acute attacks had been treated with home remedies and palliatives. During the sixth attack which was unusually severe the boy was hospitalized. The case is interesting from the clinical point of view because it shows the difficulty of diagnosing chronic cerebrospinal meningitis for there was no increased temperature, the intervals between the different attacks were comparatively long and the first examination of the cerebrospinal fluid was negative. However the author emphasizes that this case demonstrated the diagnostic significance of Flatau's chromoneuroscopic reaction. After reviewing several other cases in which cerebrospinal meningitis was characterized by successive attacks, and after evaluating the causes of this peculiarity the author discusses Weed's experiment of increased cerebrospinal pressure following the injection of distilled water. Because the patient showed signs of hydrocephalus and because the discharge from the cerebral ventricles was impeded and resulted in stasis, the author resorted to intramuscular injection of distilled water, and as a result the signs of blockage disappeared. The injection produced an increase of pressure in the cerebrospinal canal, and it not only facilitated the discharge of the fluid and the introduction of the therapeutic serum but also the equalization of the intracranial and intramedullary pressure.

### Klinsche Wochenschrift, Berlin

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- Problem of Etiology of Influenza in Light of Recent Investigations K Meyer—p 289  
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Insulin and Diabetes Problems A Gigon—p 294  
Roentgen Demonstration of Transmission of Pulsation from Artery to Vein. H Schade and T Wohleben—p 296  
\*Demonstration of Anti Pernicious Anemia Principle in Gastric Juice of Patient with Stenosis of Small Intestine and with Blood Picture of Pernicious Anemia Annemarie Schlesinger—p 298  
Acid Intoxication of Organism by Roentgen Rays K Adler—p 300  
Resorption of Salicylic Acid by Human Skin M Nothmann and M Wolff—p 302  
\*Plasma Coagulation Phenomenon of Staphylococci H Gross—p 304  
Investigations on Carotene-Vitamin A in Human Organism F Kauffmann and W von Drigalski—p 306  
Injury by Vitamin A W von Drigalski—p 308  
Differences in Growth During Nursing Period of White Mice D Gostimirovic and W Koch—p 309  
Muscular Cycle of Human Uterus W Weitz—p 310

**Blood Picture of Pernicious Anemia in Stenosis of Small Intestine**—Schlesinger reports the clinical history of a woman, aged 54, with stenosis of the small intestine and with the symptoms of pernicious anemia. The gastric juice which had a normal acidity, was tested for the presence of the antianemic principle. It was found that in contradistinction to the case with multiple stenosis of the small intestine described by Castle, the antianemic principle was present in this woman. The author concludes from this observation that the hyperchromic megalocytic anemia, developed on the basis of the stenosis of the small intestine, was not produced by the action of the intestinal stenosis on the gastric function or by the absence of the deficient resorption of the antianemic factor, and that therefore the presence of an anemia of the pernicious type is not dependent on the absence of the antianemic principle.

**Plasma Coagulation Phenomenon of Staphylococci**—Gross calls attention to the fact that in operations during staphylococcal diseases, such as in surgical interventions on carbuncles or on osteomyelitis, blood coagulation is frequently accelerated. This observation was reported as far back as 1908 by Much, who showed that this coagulating power is most pronounced in *Staphylococcus aureus*. *Staphylococcus albus* likewise contains the coagulating factor but to a lesser degree than *S. aureus*. After describing the method employed in the tests in vitro, the author mentions other investigators who found that only the pyogenic staphylococci have the coagulating capacity, and that for this reason the coagulation test can be employed in the differentiation between pathogenic

and apathogenic staphylococci. He himself was able to corroborate that the coagulation of citrated blood is a characteristic of living staphylococci and also that, to a certain extent this test permits a classification of pathogenic and apathogenic staphylococci. Other experiments revealed that not only *S. aureus* as such but also its filtrates contain the coagulating substance. He describes tests on rabbits proving that intravenous injection of small amounts of the coagulating substance resulted in intravascular coagulation and in the formation of thrombi. From this observation he concludes that the coagulating substance of staphylococci may be of etiologic significance in certain forms of thrombosis in human subjects. Finally, he discusses the existence of an antibody which inhibits the coagulatory action. In collaboration with Mondry, he found that coagulability is decreased in serums with a high antitoxin content.

12 329 368 (March 4) 1933

- Serotherapy of Poliomyelitis. A. Hottinger—p. 329  
 \*Antigen Specificity of Serum Euglobulins as Foundation of New Serodiagnosis of Cancer and Tuberculosis. H. Lehmann-Faess—p. 333  
 Culture of Bacteria in Filtrable Stage. A. I. Kendall—p. 337  
 Determination of Amino-Acids in Urine of Patients with Exophthalmic Goiter. W. Krich—p. 341  
 \*Do the Salivary Glands Influence Carbohydrate Metabolism by Incretory Action? E. Glaser and I. Bannet—p. 345  
 \*Disturbances of Vascular System Accompanied by Pain. A. Schretzenmayr—p. 346  
 Changes of Erythrocytes in Diseases of Liver. C. Camna—p. 348  
 Meimicke Clarification Reaction in Cerebrospinal Fluid. E. Meimicke and B. Holthaus—p. 349  
 Fundamental Problems of Energy Economy. F. Bandow and H. Bohnenkamp—p. 350  
 Idem. H. Heller—p. 351

**Antigen Specificity of Serum Euglobulins**—Lehmann-Faess describes experiments which indicate that, in malignant tumors and in tuberculosis, the euglobulin fraction of the blood serum (hydrochloric acid globulin) has a certain agglutinating action, and that by means of a special method it is possible to demonstrate an antigen specific character in the euglobulin fraction of the majority of cancer and tuberculosis serums. A new serodiagnosis of these diseases is thus made possible by so called cross experiments with certain test serums and entirely without the use of artificial extracts. Because of the cross arrangement it is possible to examine every serum simultaneously in two directions for its antibody content by means of test antigen serums and for its antigen content by means of serums with known antibody content. The method is based on the centrifugation of mixtures consisting of cooked and native (with lecithin preabsorbed) euglobulins in the course of which the sediments, following shaking with solution of formaldehyde may give conglobation reactions, provided homologous serums (carcinoma serums on carcinoma serums and tuberculosis serums on tuberculosis serums) have acted on each other in the combinations. In this manner it is possible to demonstrate even saturated antigenic substances in the serum independent of the quantitative combination ratios. The simultaneous examination of the same serum with the antigen reaction as well as with the antibody reaction provides a greater range for the reaction, since some of the serums react only toward one side. It has been impossible so far to differentiate definitely between sarcomas and malignant tumors of different histologic structure, in spite of the fact that the different tumor serums may show a varying capacity of reaction toward the respective serums. The simplification of the square cross method suggested by the author is to use mixed coetoglobulins or mixed antiglobulins as reagents of greater "dispersion." He considers the factors of "disintegrating immunity" the foundation for the development of the described antigens.

**Incretory Action of Salivary Glands**—Following a discussion of the literature, Glaser and Bannet describe their own investigations. They reach the conclusion that the salivary glands have no internal secretion of the nature of an insulin-like body or of secretin. However, they were able to demonstrate that the external secretion of the salivary glands in addition to other ferments, also contains peroxidase and oxidase, and they think that this external secretion by nature of its composition, is capable of compensating at least partly for the lack of pancreatic secretion. The enlargement of the salivary glands, observed by clinicians in patients with diabetes mellitus, would thus find its logical explanation. The practical conclusion the authors draw from this is that the external secre-

tion of the pancreas should not be neglected in the treatment of diabetes mellitus but that its deficiency should be compensated for by substitutional preparations.

**Vascular Disturbances with Attacks of Pain**—Schretzenmayr shows that the mechanical conditions for the development of an arterial dilatation exist in the chronic vascular disturbances, such as ambulatory angina pectoris abdominal angina and intermittent claudication, in which the attacks of pain concur with an increase of the blood pressure. However, in vascular embolism in which the pain is much more severe and an increase in blood pressure is absent, there is no dilatation of the arteries, nor can it be expected on the basis of the physical factors. Thus, the pain of those chronic vascular disturbances seems to favor the ischemic theory, that the dilatation of the arterial wall is only a facultative symptom, dependent on the facultative increase in the general blood pressure. Consequently the dilatation cannot determine the nature of the pain. The solution of this problem is of great significance for the treatment of these attacks of pain. If the treatment is based on the dilatation theory it would be necessary to keep the blood pressure as low as possible. On the basis of the ischemic theory however, a treatment with this aim in view would certainly be wrong in many cases such as in angina pectoris. It has been found that the blood perfusion of the coronary system, like that of other vascular systems, is largely dependent on the arterial pressure. A decrease in blood pressure without simultaneous dilatation would cause a decrease in the blood perfusion, that is, the ischemia would become exacerbated. The ischemia theory indicates that the medicaments of the epinephrine group, which increase the blood pressure without contracting the coronary vessels, are the most effective in angina pectoris and this has been proved in many cases which although they did not react to epinephrine, were influenced by ephedrine. But, in employing these remedies one should not overlook that by increasing the arterial pressure the impaired heart is taxed quite strongly. Attempts to decrease the pressure in patients with high blood pressure are in accordance with the ischemic theory in that, by relieving the heart from overburdening, the relation between blood requirement and blood supply becomes more favorable. In addition to the old and tried nitrite preparations, various circulatory hormones have been tried to obtain vascular dilatation but in most instances without the desired results. The authors emphasize that as a rule only the component of ischemia resulting from a functional change in the tonus of the vessels can be influenced and, for this reason even the best treatment will be effective in only some of the patients.

### Medizinische Klinik, Berlin

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 \*Polycythemia Complicated by Symptoms Resembling Those of Meniere's Disease. J. Koch and H. Rothmann—p. 320  
 \*Treatment of Chondral Form of Arthritis Deformans by Means of Cartilage Extract. D. Eisenklam—p. 322  
 \*Bronchial Asthma as Hysterical Psychosis. H. Edel—p. 322  
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 Treatment of Anemias with Organic Sulphur Preparation. E. Kottlors and E. Kerner—p. 327

**Achylic Blood and Nervous Diseases**—Under the heading of achylic blood and nervous diseases, Sinek discusses pernicious anemia achylic chloranemia and funicular myelitis. He gives as the reason for considering together these essentially different conditions the fact that it is quite often difficult to differentiate them, and also that achylia gastrica and the bacterial conditions in the small intestine related to it occur in the three conditions. After discussing the symptomatology of pernicious anemia, he evaluates the various therapeutic methods, such as the treatment with raw liver, liver extracts, a preparation of hog stomach and injectable liver extract. He considers iron therapy valueless in pernicious anemia but points out that arsenic therapy is often helpful. Blood transfusion, advisable particularly in cases in which the hemoglobin content is extremely low and during the time before the liver extract becomes active, not only is

a substitution therapy but also has a stimulating effect on the bone marrow. In discussing achylic chloranemia the author describes particularly certain differential diagnostic symptoms, such as the hollow shape, thinness and brittleness of the nails and the difference in the color of the skin and in the blood picture, as compared with what is found in pernicious anemia. Medication with iron is the most effective form of treatment, whereas arsenic and liver prove ineffective in this form of anemia. The good results occasionally obtained with liver therapy are probably the result of the high iron content of the liver. In the discussion of funicular myelitis, the author points out that this condition may develop as a complication not only of pernicious anemia and of chloranemia but also of beriberi, pellagra, sprue, scurvy and syphilis. The most important symptoms are paresthesias, disturbances in the deep sensibility and motor disturbances. He shows how funicular myelitis can be differentiated from tabes and from Friedreich's ataxia. In the milder forms he frequently found liver treatment helpful, but in the severer cases this treatment often failed.

#### Polycythemia and Symptoms of Menière's Disease—

Koch and Rothmann call attention to the fact that a diet with high fat content but with a restricted quantity of salt and meat has been successfully employed in the treatment of polycythemia. They relate the case of a man of 37 in whom the symptoms of polycythemia (over six million erythrocytes) and increased hemoglobin content (140 per cent) concurred with manifestations resembling those of Ménière's disease, such as attacks of vertigo, vomiting and tinnitus. The otologic examination seemed to show that the symptoms indicative of Ménière's disease must have been caused by lesions of the central nervous system. Since polycythemia is accompanied by an increase in the quantity of blood and by abnormal blood perfusion, such as stasis, hyperemia or retardation of the blood stream, it is probable that diapedesis took place in the central nervous system. The likelihood of this cause is borne out by the fact that symptoms resembling those of Ménière's syndrome are observed also in patients with arteriosclerosis and as an early sign of cerebral sclerosis without signs of involvement of the internal ear. Aside from these considerations, which seem to prove a relation between the polycythemia and the Ménière syndrome, the authors point out that in the reported case the fat diet had a favorable influence on the polycythemia and improved the symptoms indicative of Ménière's disease.

**Treatment of Chondral Arthritis Deformans by Cartilage Extract**—Eisenklam employed a cartilage extract in the treatment of thirty-six presenile or senile patients with chondral arthritis deformans. The extract was prepared from the cartilaginous portions of the bones of calves. After the cartilage was chopped fine it was mixed with physiologic solution of sodium chloride and this mixture was kept for twelve hours at room temperature. Then it was extracted, filtered and dialyzed. The dialysate was concentrated in the vacuum and under low temperature, filtered, sterilized by heat and put in ampules. Thus a protein-free solution was obtained that contains all dialyzable constituents of the cartilage. The extract was administered by subcutaneous injection. First, 1 cc. was given daily for four days, then 2 cc. daily for four days and after that 3 cc. daily for from seven to fourteen days. Following this, the dosage was decreased, so that during the fourth week 1 cc. was administered daily. A considerable improvement was effected within from four weeks to three months in twenty-four of the patients. The pain was lessened and the movements were improved. In the patients in whom the cartilage extract alone did not bring the desired results, a new series of injections was given and was combined with roentgen irradiation. This combination therapy proved effective in several cases.

**Bronchial Asthma as Hysterical Psychosis**—According to Edel, bronchial asthma is readily recognized during the attack but the diagnosis is difficult during the attack-free period particularly when emphysema has not yet developed. More or less severe bronchitis may be a result of the disease but is not necessarily pathognomonic. When there are no positive signs the physician may be inclined to rely on the statements of the patient, without paying sufficient attention to the clinical aspects. The patient may even come for con-

sultation with his own diagnosis, and treatment may be instituted on the strength of this. The author observed two cases of hysterical simulation of asthma, which are of especial interest because of the rare etiologic factors, the course of the disorder and the attendant circumstances. He succeeded in overcoming the psychic conflicts by the use of patience and kindly interest. Repeated consultation assiduous explanation of even the minor problems of the patient, and the employment of mild sedatives led the patient back to a more normal life.

#### Münchener medizinische Wochenschrift, Munich

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- \*Tuberculosis and Treatment with Light Baths A. Jesionek—p 327
- \*Action of Ultraviolet Rays on Catalase Content of Blood Contribution to Problem of Dosage of Ultraviolet Rays H. Koeppel—p 332
- Late Gonorrheal Arthritis Aspects of Arthritic and of Periartritic Diseases with Lingered Course F. Wirz—p 335
- Cesarean Section Formerly and Now S. Sztchlo—p 337
- Treatment of Displacements of Uterus T. von Jaschke—p 340
- Reflector with Recross Disk of Magnifiers for Examination of Eyes E. Hopmann—p 343
- New Treatment of Gastric Ulcer by Means of Short Wave Diathermy of Sympathetic and Parasympathetic Nerves of Neck R. Groth and B. Jegorow—p 343
- Treatment of Colics of Urinary Passages W. Grossmann—p 345

**Tuberculosis and Light Baths**—Jesionek points out that light baths have a curative effect not only on tuberculous foci in the skin but also on tuberculous processes within the body. On the other hand, it is possible that light baths produce an unfavorable influence on tuberculous processes. The author bases the explanation of the mechanism of this function of the skin on experimental studies indicating that the skin has an antituberculous function and is the source of the natural defense substances of the organism against the tubercle bacillus. He considers these substances as esophylaxins and designates them as epidermidal antituberculins. Already Robert Koch had noticed that the intracutaneous introduction of killed tubercle bacilli gives a quite different reaction from that caused by the subcutaneous administration. Following a discussion of animal experiments and of observations on human beings the author points out that in civilized human beings the epidermal source of the natural and antituberculous defense substances flows slowly and deficiently because only a small portion of the skin is exposed to the adequate stimuli provided by air and light. The light and air bath withdraws the skin from this unnatural condition, interrupts the evenness of the light and temperature status to which the skin of civilized human beings has become accustomed, and frees the skin from the confining influences that reduce its metabolic functions. The first stimulus exerted by the light and air bath following the removal of clothing depends on the fluctuations in the temperature. The reduced temperature, the increased pressure exercised by movements of the air and the influence of the light increase the blood perfusion of the skin and this combination of stimuli by way of the parenchyma cells that are susceptible to stimuli of heat pressure or light, regulates the blood perfusion and the blood content of the skin. In this regulation of the blood supply of the skin the author sees the most important biologic action of the light and air bath, because the blood supply determines the nutrition, the chemical composition, the warmth and the pressure of the skin as well as the function and the metabolic rate of the skin cells. The increase in the blood perfusion also enables the skin cells to produce antituberculous and tuberculo-lytic substances. In order to avoid the possible detrimental effect of the light and air bath in tuberculosis it is essential not only to avoid light induced inflammation of the skin but also undercooling and overheating for such influences may paralyze instead of stimulating the parenchymal cells of the skin.

**Ultraviolet Rays and Catalase Content**—Koeppel calls attention to the fact that the great significance of catalase for all oxidation processes in the organism and its consequent importance for all life processes of the cells is based only on the factor that all cells decompose hydrogen dioxide and that therefore all cells must contain catalase. In recent times the catalase has been measured by determining the oxygen liberated in the decomposition of hydrogen dioxide. Certain aspects of this energy determination could be studied through the influence

exerted by the ultraviolet rays of the quartz lamp on hydrogen dioxide, and the experiences gained thereby were an advantage in catalase determinations of the blood. The author discusses a number of investigations on the action of the ultraviolet rays on ferments and shows that many of them contradict one another. His own studies likewise contradicted one another at first for the influence of irradiation on the blood catalase became manifest either as an increase or as a decrease in the catalase value. Only after the initial value had been given consideration did these results become clearer. It was found that, when the initial catalase values were high irradiation with ultraviolet rays effected a decrease, whereas a low initial value was found to be increased after irradiation. Thus the catalase content plays an important part in the determination of the correct dosage in ultraviolet ray treatment of rickets. The author's studies convinced him that children with low or average catalase content are suitable for ultraviolet ray treatment while those with high catalase content are not. In children in whom ultraviolet irradiation was omitted because of high catalase content, improvement set in just the same. The author admits that catalase determinations before and after irradiation with ultraviolet rays reveal only the response of the organism to irradiation, but he admits that this test method cannot replace the "erythema dose test, for there are no relations between the two test methods.

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\*Progress in Injection Treatment of Hemorrhoids. H Henninger—  
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\*Parenteral Treatment of Pernicious Anemia. A Schechter—p 272  
Roentgen Examination of Postoperative Biliary Fistulas. F Fleischner  
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Treatment of Functional Amenorrhea. R. Hofstätter—p 275

**Injection Treatment of Hemorrhoids**—Henninger reviews the history of the injection treatment of hemorrhoids and describes his own observations on sixty-seven patients. At first he used 70 per cent alcohol and, in the case of internal hemorrhoids he always obtained good results with this method, but the injection into a subcutaneous nodule resulted in gangrene. This induced him to try a milder substance and on the basis of Winkler's report, he tried the various types of sugar in glycerin, which he had found helpful in the treatment of more than 100 cases of varicose veins. He tried dextrose, lactose and galactose with glycerin, and he is as yet unable to say which of these is the most effective. The solutions employed by him were a 10 per cent solution of dextrose in undiluted bidistilled glycerin, either alone or with the addition of 4 per cent quinine hydrobromide, a solution of from 20 to 25 per cent galactose in bidistilled glycerin and a 10 per cent solution of quinine hydrobromide in 70 per cent alcohol. The author points out that the unfavorable results reported from the injection treatment probably concern the external hemorrhoids, because the skin reacts differently from the mucous membrane. For this reason he advises the employment of different injection fluids for the external and internal nodules. For the internal nodules he recommends the use of alcohol or of alcohol with quinine, and for the external nodules he employs only the sugar glycerin combinations. The doses should be small. If alcohol is used, from 0.5 to 1 cc. should be injected in each nodule, and in case of the sugar glycerin combinations from 1 to 1.5 cc. should be given. These combinations should be warmed before injection to make them more fluid. It is generally possible to treat all existing nodules in one session.

**Parenteral Treatment of Pernicious Anemia**—Schechter shows that the parenteral treatment represents considerable progress in the therapy of pernicious anemia. It is particularly helpful in advanced cases and makes it possible to treat them effectively without blood transfusion. The author made his observations on the injection therapy in seventeen cases nearly all of which were quite severe. He obtained good results with injectable liver extracts and also with intramuscular injections of biogenic amines particularly with choline. In cases that were refractory to oral liver therapy, a combination or alterna-

tion of injections of liver extract and of choline proved helpful in that the blood status became normal or even supernormal. There was no absolute failure, nor any fatality among the seven cases in which the author employed the injection therapy.

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**Blood Transfusion.**—Smirnov and Ermolenko report their observations in 260 blood transfusions performed on 189 patients. When the main indication was to increase blood coagulability, they resorted to the citrate method. Citrated blood with dextrose was used when the indication was to replenish the blood-vascular tree. After copious hemorrhage, whole blood was given. They insist on the use of the three drop method of Nuerenberger for the compatibility test in every case in addition to grouping of the donor and the recipient. In three of their patients the test was positive in otherwise corresponding groups. They believe in the use of relatively small doses, from 100 to 200 cc., to accomplish hemostasis. They conclude that blood transfusion is the most potent means of combating a hemorrhage. The effect is beneficial but evanescent in acute septic conditions, the percentage of permanent improvement being insignificant. In chronic sepsis, blood transfusion gave a high number of permanent recoveries especially when combined with specific vaccine therapy.

**Blood Picture in Endocarditis**—Vydrin reports on hematologic studies in twenty-five cases of endocarditis. Of these twenty patients had chronic endocarditis and five had the acute form. In four of the patients with chronic endocarditis he found in addition, a glomerular nephritis. Shilling's method of counting was used. The blood picture in the acute endocarditis showed an erythrocyte count of 2,000,000 or lower, a hemoglobin percentage of from 20 to 35, a neutrophil leukocytosis with deviation to the left (Schilling), and a presence of juvenile forms of from 5 to 8 per cent. Such a picture offered a poor prognosis. Three of the five acute cases proved fatal. The red count in the milder cases was from three and one-half to four million and the hemoglobin from 60 to 70 per cent. The color index vacillated between 0.6 and 0.7. There were signs of secondary anemia both in the acute and in the chronic cases in which septic manifestations and poor resistance were present. In two patients the blood picture approximated that of pernicious anemia, the erythrocytes fell to 1,030,000 and the color index was 0.9 per cent. A leukocyte count of from 10,000 to 12,000 was found in eleven patients, and in cases complicated with glomerulonephritis the count reached 18,000. The differential count showed from 84 to 86 per cent of neutrophils with a deviation to the left from 2 to 4 per cent of juvenile forms and a lymphopenia. In favorable cases, leukocytosis disappears and the lymphocytes increase. Six patients with septic manifestations and poor resistance presented a picture of leukopenia. Monocytosis of from 12 to 16 per cent was seen in patients with good resistance and a favorable course. The blood picture in the three fatal cases showed a sharp deviation to the left on the part of the neutrophils, with a juvenile cell count up to 11 per cent and a 20 per cent monopenia. Eosinophils were present in twenty-two cases but did not appear to have any diagnostic significance. A lymphocytosis of from 35 to 40 per cent without a deviation to the left was present in six cases. These were cases with a favorable course. Changes in the vascular-endothelial system mentioned in the literature and manifested by the presence of endothelial cells in the circulating blood were observed in only two cases and in these the chronic endocarditis was complicated by a syphilitic aortitis. The author did not observe any improvement from blood transfusion.

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## TRAUMATIC ULCER OF THE DUODENUM AND STOMACH

BURRILL B. CROHN, M.D.  
NEW YORK

AND  
JULIUS GERENDASY, M.D.  
ELIZABETH, N. J.

A case of duodenal ulcer following on, and probably caused by, abdominal trauma was recently called to our attention. This case, with all the details and roentgenographic observations, has been described by one of us<sup>1</sup>. In studying the etiologic traumatic factors which we believe led to the formation of the ulcer, we had occasion to look into the literature, not only of our own country but of foreign countries as well. Having established to our own satisfaction that in at least this one instance the relationship of the trauma to the duodenal ulcer was one of cause and effect, we were surprised to learn two supplemental facts: first, that American literature fails to take serious notice of the possibility of such an occurrence or glosses over the fact, many if not most American clinicians probably denying the existence of such a relationship, second that foreign publications not only recognize the fact that traumatic ulcer of the duodenum or stomach does occur, but German and French literature is replete with very illustrative examples and references and not only recognizes its existence but describes in detail the *modus operandi* of the trauma, the clinical manifestations that accompany the formation of the lesion, and the clinical course of this unusual ulcer syndrome.

Approaching the subject at first with a healthy skepticism, we soon recognized the validity of the foreign writers who described this clinical picture. By the same token we had occasion to find fault with the undue diffidence and skepticism of our own students of gastro-enterology in refusing to accept the concept of traumatic gastric ulcer. What was even more noteworthy was the fact that most of our own confreres who should have been in a position to pass an opinion were usually entirely ignorant of the existence of the problem, if a problem existed, or had no personal knowledge of, or experience with, the underlying facts or premises of the thesis.

A brief review of the facts in the case which so impressed itself on us is as follows:

A woman, aged 45, who never had any previous digestive disturbances or complaints, was violently thrown out of a seat of a bus, late one afternoon and catapulted across the aisle so that the epigastric area of the abdomen forcibly struck a projecting edge of the opposite bench. She complained forcibly

of the pain but was able to proceed to her home. The next morning she felt a less severe epigastric distress, on evacuation of the bowel she noted that the stools were 'black' (melena). Two days later she felt nauseated and vomited a large quantity of blood. She was removed to a hospital where the hematemesis was repeated several times, associated with melena. The physical examination at this time, aside from the shock revealed a large bruise to the right of the epigastrium. She left the hospital about a month after admission, the gastric hemorrhage being controlled by the usual conservative methods.

The course of the case has been characteristic of a typical Moynihan duodenal ulceration. There were periods of symptoms of severe pain, heartburn, vomiting and relief by food and alkalis, alternating with other periods of relative quiescence. Two further roentgenographic studies, one taken one month after the accident and a third series taken thirteen months after the injury, all clearly corroborated the presence of a duodenal ulcer characterized by deformity of the duodenal bulb, pylorospasm and a slight six-hour gastric residue. Two years after the injury, and in spite of repeated courses of medical treatment (bed rest, alkalis, the Sippy diet) one has no difficulty in recognizing all the features of a true duodenal ulceration characterized clinically by postprandial pain, vomiting, heartburn and loss of weight. Epigastric tenderness on deep abdominal pressure persisted. The question of operative intervention, two years after the occurrence of the trauma and of the onset of symptoms, has been broached on account of the persistence and the severity of the symptoms.

Approaching the subject in a dispassionate and purely juridical mood, one must recognize that before, and up to the moment of the accident there were registered absolutely no digestive disorders or other abdominal or general complaints. Directly following the injury, or within twenty-four hours, we noted the development of symptoms, of signs and within two weeks, of the roentgen deformity of a duodenal ulcer. The evidence seems convincing that the trauma caused the ulcer. Before drawing such a final conclusion, one must consider and dismiss such contrary arguments as may be advanced.

Could a silent ulcer have existed prior to the accident? Is the patient a malingerer, or at least exaggerating and creating symptoms so as to establish a legal claim for compensation or for an award in a suit in negligence?

It is true that about 5 per cent of the adult population have, or have had, a gastroduodenal ulceration. It is probably equally true that in some of these individuals ulcer may be passive, dormant or latent. In this individual there was no previous history of ulcer of the digestive tract and nothing to point to its existence. Furthermore, this patient is normally sensitive and even hypersensitive to pain by the styloid pressure test of Libman,<sup>2</sup> and for this reason, and on the basis of our experience with pain sensitivity in ulcer, we do not consider it likely or probable that an ulcer could have existed without consciousness of its existence.

<sup>2</sup> Libman E. *Tr. A. Am. Physicians* 41:305 1926. 44:52 1929.  
Crohn B. B. *Am. J. Surg.* 7:474 (Oct.) 1929. Libman Anniversary  
Volume. *International Press* 1:337 1932.

<sup>1</sup> Gerendasy Julius. *Am. J. Surg.* to be published.

We are, to be sure, lacking a radiographic study of the stomach before the accident, but such evidence would be possible only by a rare coincidence.

Against the argument of malingering or exaggeration on the part of the litigant, it must always be remembered that an ulcer deformity and niche was three times shown to exist in the duodenal cap. It is the actual existence of this ulcer deformity that interests us scientifically, not the degree of complaint that is at issue before us.

#### MEDICAL LITERATURE

From a perusal of the American literature and textbooks it soon becomes evident that the passing references and guarded opinions which refer to this subject are based on the experiences of other, usually foreign, writers. There are no publications in American medical journals that deal clearly with this subject or which exhibit first-hand information, experience or case histories.

The fact that foreign literature and many foreign writers accept the premises and the conclusion make it all the more important that the subject be thrown wide open for critical discussion by the resident members of our own profession, known in this country for their critical reserve and healthy skepticism toward new concepts and suggestions.

A comprehensive review of the foreign literature on this subject is contained in the 1930 edition of Richard Stern's textbook.<sup>3</sup> Traumatic surgeons recognize the fact that severe abdominal blows may lacerate a stomach. Such blows dealt directly, as a kick or a heavy body falling on the abdomen, automobile injuries and falls from a height, constitute the principal means by which such traumas are administered. Under such conditions, such a severe blow will cause injuries of the gastric wall, varying from mucosal and submucosal lacerations with extravasation of blood (submucosal suffusions) or acute hemorrhages with separation of the mucosa for varying extents. Greater blows may cause actual ruptures of all or of several of the coats of the stomach wall. Such injuries usually occur on the lesser curvature of the stomach, at or near the pylorus, or may rupture the fundus completely by sudden elevation of the intragastric pressure to the bursting point.<sup>4</sup> The milder types of injury may regress with healing, death may ensue from hemorrhage or perforation, immediate surgical intervention may save the case, or, probably, an ulcer of the mucosa and the walls may follow as a sequel.

There are certain oft-quoted animal experiments that most writers are fain to refer to because of their reputed value in establishing such injuries. The two authors most quoted are Vanni<sup>5</sup> and Ritter.<sup>6</sup> Both writers used rather crude methods to establish their point. In all experiments a dog was anesthetized and tied, abdomen upward, on a table, a violent blow was dealt the abdomen with a heavy stick or hammer. There was no difficulty in producing lacerations and rupture of the stomach under these experimental conditions, particularly when the experiment was carried out directly after a full meal had been given. One can

see little point in these experiments, for true ulcers have never been seen in the dogs, even when they were allowed to survive for varying periods. In most of the animals in which the injury was sublethal, evidences of healing were readily demonstrable, this fact agrees with the experience of most laboratory workers who have attempted to produce ulcers in animals by creating mucosal defects, by mucosal injection experiments, or by other means. All such defects heal readily if the conditions of the experiment remain uncomplicated.

#### CLINICAL OBSERVATIONS

In 1856, Potain<sup>7</sup> first described a case in which he attributed to a blow on the abdomen the formation of a gastric ulcer. This is the classic case which initiates the literature on the subject. A falling piece of furniture struck a woman aged 60, on the abdomen. A continuous course of eight years of clinical symptoms of ulcer followed, death by inanition eventually resulting. At the autopsy a traumatic hour-glass stomach was demonstrated, with an ulcer 2 by 5 cm placed "à cheval" on the lesser curvature and penetrating the body of the pancreas. The case was presented in the clinic of Cruveilhier, the latter himself presiding, with no less a pathologist than Axenfeld to demonstrate the morbid specimens. All those present agreed to the correctness of the facts and to the conclusion that the ulcer was traumatic in origin. The historical background and interest in this demonstration were notable.

The case of Potain marks the beginning of the interest in this subject. At varying intervals, successive cases were reported, so that by 1913 Petit<sup>8</sup> was able to recount no less than seventy-three plausible cases. Of course, the objection may well be raised that between 1856 and 1903 most of the citations were purely clinical observations, unsupported by autopsies or biopsies, occurring before the utilization of x-rays for verification, and before the recognition of the existence of duodenal ulcers (Moynihan, 1903). Such objections are scientifically logical and call, therefore, for a more critical scrutiny of all the clinical data and for a rearrangement and readjustment of the facts.

#### CASES RUNNING A SHORT COURSE WITH RECOVERY

Dumeny,<sup>9</sup> in 1903, was able to collect eighteen such likely cases, since which date many other examples have been added. The injuries are of varying natures but are generally catalogued as (1) blows by falling bodies, usually heavy articles of furniture, falling wagons or massive crates, (2) injuries caused by a punch, a kick, human or animal, among which kicks by horses are the most common, (3) falls from heights, landing on the abdomen and striking projecting surfaces, (4) being run over by a wagon or an automobile, or compression injuries resulting from railroad accidents. The injuries in all instances were severe, lighter blows or falls rarely being recorded as leading to this symptom complex. Within a few hours, or from one to six days following the injury, pain, vomiting and distress supervened. The vomiting of blood may occur almost immediately or, at times, from twelve to twenty-four hours, later, or may occasionally be postponed for from one to two weeks. After the initial shock (or collapse as the case may be), the full picture of a gastric injury becomes evident, quickly assuming the char-

3 Stern, Richard. *Traumatische Entstehung innere Krankheiten*. Jena. Gustav Fischer 1930 p. 256.

4 Rose, E. *Deutsche Zeitschr. f. Chir.* 34:12 1892. Rehn, L. *Arch. f. klin. Chir.* 53:383 1896. Poland, Alfred. *Guy's Hosp. Rep.* series 3 1858 vol. 4. Robertson, H. *Injured Abdomen*. Am. J. Surg. 14:395 1931. von Hofmann. *Lehrbuch gerichtlicher Medizin*. Vienna 1893 p. 460. von Winiwarter, F. *Wien klin. Wchnschr.* 15 1389 1902.

5 Vanni, L. *Lo Sperimentale* 43 113 1889.

6 Ritter, A. *Zeitschr. f. klin. Med.* 12:592 1887.

7 Potain, A. *Bull. Soc. anat. de Paris* 31:385 1856.

8 Petit, C. A. *Paris thesis* 1913 1914.

9 Dumeny, A. *L'ulcère traumatique de l'estomac*. Paris thesis 1903.

acteristics of an ulcer, gastric or duodenal. The course is run in from a few weeks to six months, almost always resulting in a clinical cure. The cases that become chronic and exceed this time limit (six months) or develop complications are discussed later.

#### ACUTE TRAUMATIC PEPTIC ULCER, SHORT COURSE

The following typical examples of this type of case with spontaneous resolution are cited from the voluminous literature.

A man, aged 38, was kicked in the right hypochondrium by the hoof of a horse. Immediate vomiting and violent cramps set in. The next day there was repeated hematemesis with melena and severe postprandial pain. There was rapid loss of weight and marked epigastric tenderness on pressure, and diarrhea. Under treatment with bed rest and milk diet for three weeks, all symptoms regressed.<sup>10</sup>

A man, aged 57, was struck by the shaft of a wagon in the upper part of the abdomen. Immediate violent pain set in at the site of the injury. Eight days later vomiting began, which recurred daily in spite of strict dietary treatment; there was marked epigastric tenderness on pressure. Resolution occurred after six weeks.<sup>11</sup>

These two classic cases are quoted merely as examples of instances of traumatic ulcer which, after a short course, responded favorably to treatment and recovered. In the earlier reports from the literature actual proof or visual demonstration of the existence of the ulcer is lacking. Roentgenographic or operative confirmation does not exist, and yet the sequential rise of the ulcer from the injury seems plausible. But there are occasional cases cited in later literature in which without any history of a previous gastric disease, an ulcer was visually demonstrated as resulting from an injury. The following cases may be cited as illustrative examples.

A railroad employee was caught between two cars, pain and loss of appetite resulted. Six months later, severe attacks of abdominal pain became pronounced. A progressive downward course followed. At autopsy a perforated gastric ulcer was observed on the lesser curvature, 1.2 cm from the pylorus. In this case, the length of the time between the injury and the onset of severe symptoms somewhat weakens the argument favoring a traumatic origin of the ulcer.<sup>12</sup>

A man was kicked with great violence in the upper part of the abdomen by the hoof of a horse. Five days later, fatal hemorrhage supervened. At the autopsy three ulcers were seen, situated on the lesser curvature of the stomach, one of which enclosed a large perforation.<sup>13</sup>

As a striking instance of the rapidity with which characteristic duodenal ulcers may form, we may cite the following case.

A man aged 39, was violently struck by a heavy falling body, and died sixty hours later of injuries to the thoracic organs. A fresh bleeding, acute duodenal ulcer was exposed at autopsy, open vessels lying free in the necrotic walls and base of the lesion. This case is of unusual moment as demonstrating the rapidity of the formation of peptic ulcers, a fact that has been clinically conceded by experimental pathologists for the usual peptic ulcer and must now also be conceded for traumatic lesions.<sup>14</sup>

While such instances are striking in their evidence, it is obvious that unsupported by further facts the case for a traumatic origin of an indurated gastric or duodenal ulcer of the Cruveilhier type is still incomplete. One must therefore rely for further evidence

on the type of case in which a typical chronic peptic ulcer followed abdominal injury. The literature is replete with such citations, probably not less than fifty or sixty examples being susceptible of notation. Most of the cases followed long periodic courses, the clinical symptoms being characteristic of a peptic gastric or duodenal ulcer. Actual proof of the ulcer, however, is lacking. There are a few cases in which operation or autopsy bring full confirmation of the existence of the ulcer and make the traumatic etiologic factor so plausible as to be almost undeniable.

#### CASES ILLUSTRATING THE CHRONIC TYPE OF ULCER

The following are examples of the chronic type of traumatic ulcer.

A man, aged 40, a ranger, was traumatized by a fall against the butt of his own rifle. For several hours he had severe abdominal pain but no vomiting; later pains recurred regularly after meals. Relief followed after eight days but two months later pain, and now vomiting recurred with greater intensity. Severe heartburn belching and pain followed within a few minutes of the completion of the meal with vomiting from five to six hours later. Several weeks later, severe hematemesis resulted in syncope, followed by progressive emaciation induced by protracted pain and vomiting. The man was pale, anemic and emaciated and showed marked epigastric tenderness on pressure. Gastric lavage and dietary treatment were actively instituted, with progressive relief. The patient was observed on and off, for three years when eventually the symptoms ceased.<sup>15</sup>

A man, aged 31, was involved in a railroad accident, being compressed simultaneously in the epigastrium and the back. Fifteen days later he began to complain of postdigestive distress with vomiting half an hour after each meal. Two months later, during the progress of the case, he was suddenly seized with severe hematemesis; he showed severe epigastric tenderness on examination. For six months there was a progressive downward course, in spite of very intelligent medical treatment. One year later the patient was still vomiting, often with blood. After a protracted course of two and one-half years, spontaneous healing occurred, with full recovery.<sup>16</sup>

Innumerable other cases of this type might be cited, Stern<sup>3</sup> giving several very plausible examples of traumatic ulcer. However, the actual visible proof being absent, this group of cases is left in the category of likely and probable, rather than proved, instances.

#### CASES OF CHRONIC TRAUMATIC ULCER PROVED BY OPERATION OR AUTOPSY

A third group, however, offers real proof of the existence of an ulcer following directly, or soon after an accident to the abdomen, in which, previous to the trauma, no evidence or suspicion of a gastric lesion had existed. Of this group, the following represent some but not all of the outstanding examples.

A patient had been injured by a violent blow on the abdomen. Vertigo and shock resulted, with rapid successive hematemesis. After one month, some improvement in the general condition was noted, but the postdigestive complaints were maintained, though the hemorrhages had ceased. About three months after the accident a definite diagnosis of post-traumatic ulcer was made on account of the severe postprandial pain, vomiting and progressive emaciation. Two years after the accident the patient died of pulmonary tuberculosis; at the autopsy a cicatrized plaque was observed on the lesser curvature of the stomach, midway between the pylorus and the cardia, from this cicatrized area scars radiated for 6 cm in several directions.<sup>16</sup>

10 Deronet. Paris thesis 1879.

11 Leube. William. *Centralbl f klin Med* 8:81 1886.

12 Pauly. Aertzt Sachverst Ztg 4:24 1898.

13 Fertig. *München med Wchnschr* 52 1781 1905.

14 Gruber. *G. Deutsches Arch f Klin Med* 110 497, 1913.

15 Levig. William. *Inaugural Dissertation* Kiel 1898 quoted by Stern.<sup>3</sup>

16 Thoinot. L. *Precis de médecine legale* Paris 1:394.

Potain's case, which was referred to earlier in this article,<sup>7</sup> represents a bona fide instance of an ulcer demonstrated at autopsy to have followed on and existed for eight years after the accident. The position, size, and cicatrization of the ulcer on the lesser curvature demonstrates strong evidence, since the site corresponded to the location of the injury, and the symptoms followed directly on the trauma.

A woman, aged 67, sustained a violent fall on the abdomen, subsequent to which she complained consistently of post-digestive pain. Two years later she had a sudden, enormous and fatal hematemesis. At autopsy the stomach contained liquid blood and was the seat of a large ulcer on the posterior wall of the distal half of the stomach, the base of the ulcer being adherent to the pancreas. The ulcer was 3.5 by 4 cm. in diameter, elliptic, almost circular. The fatal bleeding resulted from the erosion of an exposed branch of the splenic artery.<sup>17</sup>

A man, aged 35, was struck in the abdomen by the hoof of a horse. A few days later, vomiting began. Symptoms continued with increasing severity for one year, at which time a gastro-enterostomy was performed for a pyloric ulcer. A cure resulted.<sup>18</sup>

Kronlein's<sup>19</sup> rather remarkable and striking case is probably the first in which a duodenal ulcer was described as following an injury.

A man aged 24, an equestrian, was violently thrown over the saddle of his horse, the abdomen striking with violence the pommel. Twenty-four hours later the patient began to experience violent postdigestive pains. Four weeks later, vomiting was added to his symptoms. However the symptoms were alleviated for a short period of weeks only to recur with severity and with increased loss of weight.

Four months after the accident, the patient came under the observation of Kronlein. There was marked epigastric tenderness and evidence of gastric dilatation with probable pyloric stenosis. As much as 3 liters was vomited at one period, at times with the presence of free acid, at other times when coffee-ground material was obviously present without free acidity. The patient was operated on eight months after the trauma. A stenosing, cicatrizing ulcer of the pylorus adherent to the liver, was demonstrated at laparotomy. A resection of the pylorus was undertaken, but death resulted. At autopsy a round ulcer of the duodenum was observed, causing a marked stenosis of the duodenal lumen.

A second case by this author<sup>10</sup> bears similar testimony to the existence of a post-traumatic cicatrizing ulcer.

A man aged 48 was struck in the abdomen by the handle of a pitchfork. Severe pain began within twenty-four hours. Three months later protracted vomiting occurred with loss of appetite and emaciation. At operation a dilatation of the stomach was seen with white areas of scar tissue in the pyloric region. On the suspicion of carcinoma, a resection was performed, the resected specimen, however, showing only the cicatrix of a healing pyloric ulcer.

A man, aged 40, three and one-half years after a powerful kick in the left hypochondrium and after a prolonged period of gastric distress and vomiting, underwent an exploratory laparotomy. A gastro-enterostomy was performed for an ulcer adherent to the inferior surface of the liver, the anterior surface of the body of the stomach was adherent also to the anterior abdominal wall.<sup>20</sup>

The case of Abercrombie,<sup>21</sup> a report of which was published as early as 1824, deserves due consideration.

A woman was kicked in the abdomen by a horse. An inflammatory tender area in the upper part of the abdomen was present for some time but suddenly disappeared during an

attack of coughing. Severe diarrhea was followed, after a time, by death. At autopsy there was noted a perforated ulcer of the lesser curvature of the stomach adherent to the liver, the site of a fistula connecting the wall of the stomach with the ileum. The sudden change in the course of the symptoms was thus to be explained on the basis of a sudden rupture of a perforating ulcer with abscess into the lumen of the ileum.

Wendel<sup>22</sup> cites the case of a man who sustained a violent fall on the abdomen. After a protracted course of four years, cure resulted following a gastro-enterostomy for a stenosing pyloric ulcer.

While the pylorus seems most often to be the site of the ulcer, the lesser curvature ranks next in frequency. The following case is a little unusual.

A man aged 35, sustained an abdominal injury, which was followed by symptoms of ulcer for one and a half years. There had been no previous gastric complaints. The usual vomiting and hematemesis finally ensued. At operation an inflammatory mass occupied the lesser curvature, four fingerbreadths from the pylorus. This mass consisted of a fistulous tract leading from the base of an ulcer through inflammatory tissue with numerous small abscesses to the bed of the liver.<sup>23</sup>

The case of Pauly<sup>12</sup> is cited and discussed by Stern as an ulcer occurring as a result of a violent throw backward on the part of a man to prevent a fall. Six weeks later a duodenal ulcer perforated with fatal issue. Though the patient had always been absolutely well before the fall, Stern, who is very critical, tends to accept the case as one of traumatic ulcer, though with some hesitation.

#### CASES SUSTAINED BY ROENTGENOGRAPHIC DEMONSTRATION OF ULCER

Stern<sup>3</sup> further accepts without reservations two cases in which the roentgenographic evidence of an ulcer forms the substantiating evidence. In one case, that of O. Gross, a lesser curvature niche was seen fifteen months after the injury. In the second case, a penetrating duodenal ulcer with niche formation was roentgenographically observed two years after the injury.

#### COMMENT

While this article is not intended in any way to include a comprehensive review of all the cases in the literature, sufficient striking and illustrative cases have been cited to demonstrate the outstanding characteristics of the etiology, pathology and clinical course of a traumatic ulcer.

#### ETIOLOGY

From the standpoint of etiology, it will readily be seen that cases in men far outnumber those in women as can easily be assumed, day laborers and artisans employed in the more strenuous occupations being exposed more freely to accidents. The trauma is always of the severe type, falls, violent compression injuries and vehicular accidents, blows from falling bodies and from projecting objects predominating. There is an immediate period of shock, followed within a short time (from twenty-four hours to a few days, at most, weeks) by the onset of symptoms.

Occasionally the violence involves a portion of the body distant from the abdomen, the indirect force acting along the principles of contrecoup. In more instances the posterior wall of the stomach has been lacerated by falls on the spine, or by explosions. Such an unusual mechanism is illustrated in the case of Thiery<sup>24</sup> in which a man fell 24 feet, landing on his buttocks, the injury resulting in an ulceration of the gastric mucosa. Occasional cases have been cited in

17 Carrière Bull. Soc. anat. de Paris 38 121 1863

18 Lexer quoted by Pettit

19 Kronlein Mitt. a. d. Grenzgeb. d. Med. u. Chir. 4: 493 1898 1899

20 Hannecart Ann. Soc. Belge de Chir. 4: 128 243 1904

21 Abercrombie, J. Edinburgh M. & S. J. 1824

22 Wendel München med. Wchnschr. 55 877 1908

23 Jakch Arch. f. klin. Chir. 84 938 1902

24 Thiery P. Bull. Soc. anat. de Paris 44 352 1889

which the violence of abdominal wall contractions are so severe, as in attempting to save oneself from a fall, that the mucosa of the stomach is bruised by the strenuous muscle effort, or, as in a case cited, of the man lifting a heavy cask of wine

#### PATHOLOGY

The pathologic changes that result from the injury are probably at first merely submucosal or mucosal hemorrhages, with lacerations of the walls of the stomach of various degrees of severity. After the short preliminary or incubation period, the symptoms point to the formation of a true peptic ulceration occupying the seat of the trauma and caused, presumably, by the peptic digestion of the lacerated and blood-suffused mucosal tissue. Such ulceration occurs with great rapidity, apparently within a few hours or, at most, a few days.

Traumatic ulcers are usually single, occasionally, as in the case cited by Fertig,<sup>18</sup> three gastric ulcers were seen all in the same line along the magenstrasse or lesser curvature groove, one of which had opened the coronary artery of the stomach. The form of the ulcer is variable, it may be circular, elliptic or oval. The dimension varies from 0.5 cm. to 5 or 6 cm. in diameter. The ulcer does not necessarily occupy the whole extent of the traumatic tear. In the case of Potain,<sup>19</sup> the cicatrix extended almost half across the organ, though the ulcer occupied only the lesser curvature of the tear.

Microscopically, the fully developed traumatic ulcer differs in no way from the usual peptic ulcer.

The site of the ulcer is frequently the pylorus, often the lesser curvature, and occasionally the surfaces of the anterior or posterior walls of the antrum or body of the stomach. In this respect traumatic ulcers follow the statistics for distribution of the usual peptic ulcer not necessarily that these sites are more often exposed to the trauma but because these are the areas of the stomach where, according to the theory of Aschoff,<sup>20</sup> minor traumas, such as occur from rough food or chemical injuries, result in ulcer formation.

A more obvious explanation is also plausible, for it is the antrum and the lesser curvature of the antral region that are exposed to injuries, since these areas of the stomach underlie the exposed epigastric angle of the abdominal wall. The pylorus, lying deeper and more to the right, is less exposed but more liable to be compressed against the vertebral column as a result of a crushing blow or fall. The great tendency of the pyloric ulcer to cause stenosis is easily understandable, as here there is not only the customary tendency of pyloric ulcer to cicatrize with stenosis but also the factor of the fibrous healing of the traumatized pyloric tissues incident to the original injury.

The duodenum as the site of traumatic ulcer seems far outnumbered by the stomach. This is easily explained on two grounds. The duodenum is better protected from direct injury by its deep placement and attachment to the right border of the vertebral column opposite the first and second lumbar vertebrae. In this site it is sheltered by the broad projecting bulk of the bodies of the vertebrae and can be reached only by a very direct and insinuating blow or object. In the second instance, the earlier literature fails to recognize duodenal ulceration, since before the publications of Moynihan in 1903 the existence of duodenal ulcers was practically overlooked. It is for this reason that statis-

tical comparison of the relative frequency of gastric versus duodenal lesions must be inaccurate.

In addition to the ulcer itself, the pathologic descriptions deal with perforations of the ulcer bed and adhesences to the pancreas, liver or abdominal walls, fistulous tracts incident to chronic perforating ulcers, and abscesses and forms of localized peritonitis as well as occasional gastrocolic and gastrojejunal fistulas are also cited as complications of traumatic ulcer.

Gastric acidity or the existence of free hydrochloric acid in the stomach contents seems a constant factor in all the literature, wherever the analysis of gastric contents is mentioned, free acid and high degrees of total acidity are always quoted. There are no instances of anacid traumatic ulcers.

#### SYMPTOMATOLOGY AND COURSE

The onset of the digestive symptoms corresponds to the formation of the peptic ulceration. The symptoms are usually initiated by pain and vomiting, hematemesis occurring early in the course or with the first bouts of vomiting. Sometimes hematemesis is delayed, occurring only weeks or months later in the course. All the cases are characterized by emesis of blood or by melena, for hemorrhage seems to be a constant report in the literature, either because it is a constant phenomenon or because no author will report a case without this confirmatory and pathognomonic symptom. In general, the clinical course of the case resembles in all its features that of the customary peptic ulcer. Periodicity is an outstanding feature, though the usual seasonal variations and recurrences have not been noted. The cases seem to run a more severe course, however frequently being accompanied by those more serious complications associated with ulcer such as perforation, hemorrhage, pyloric stenosis, and hour-glass deformity.

The progressive downward course in the more serious and fatal cases is characterized by protracted vomiting, loss of weight and flesh, anemia, and severe emaciation. Many of the cases have come to operation, gastro-enterostomy being the procedure of choice since most of the operative indications have been predicated on the pyloric stenosis, which is so common a complication.

Malignant degeneration of traumatic ulcer has not been observed.

#### PROGNOSIS

Little may be said on the subject of prognosis. It is obvious that only the more severe cases are reported in medical writings. The milder cases have been occasionally reported, but, resulting in spontaneous cure are subjected to the criticism that the ulcer had not been demonstrated or proved beyond a reasonable doubt. With the free use of roentgenography, it seems likely that more cases of the less severe and nonfatal type will be increasingly reported.

Does mild trauma play any important role in the formation of the usual peptic ulcer? Various authors have reported trauma as an etiologic factor in groups of accumulated ulcer statistics.

Thus, Mattison<sup>26</sup> reports twenty-five cases of traumatic ulcer and states that in his opinion 15 per cent of all peptic ulcers have some relative traumatic insult before the onset of symptoms. Friedenwald,<sup>27</sup> in 200 collected cases of peptic ulcer, found a history of trauma to the abdomen in 2 per cent of the series.

<sup>25</sup> Aschoff L. *Lectures on Pathology*. New York, Paul B. Hoeber Inc. 1924.

<sup>26</sup> Mattison K. *Traumatic Gastric Ulcer*. *Hygiea* 86: 370 (June 15) 1924.

<sup>27</sup> Friedenwald Julius. In discussion on Jordan Sara M. and Kiefer E. D. *Am J Surg* 15: 472 (March) 1932.

Hurst<sup>28</sup> states that from time to time there is a close connection between trauma and the development of a gastric ulcer, though he quotes no percentages. Einhorn<sup>29</sup> makes a similar observation.

The thought is thrown out merely as a suggestion that perhaps mild traumas have been overlooked in the anamnesis of ulcer cases, given an ulcer constitution and chemism, may not seemingly mild trauma be a more frequent deciding etiologic factor than has hitherto been admitted?

#### CRITICAL SUMMARY

Liniger and Molineus<sup>30</sup> have specified certain postulates that need to be satisfied before a case of suspected traumatic ulcer may be accepted as a true example of such a lesion.

- 1 Proof must be given of the absolute absence of gastrointestinal complaints or symptoms prior to the accident.
- 2 The trauma must be a severe one and localized to the abdominal wall, preferably to the epigastrium.
- 3 The immediate onset of symptoms must follow the injury.
- 4 The continuation of the developing symptoms and signs must assume the characteristics of a true gastric or duodenal ulcer.

Judged by these postulates, it seems impossible to escape the conclusion that traumatic ulcer of the stomach and duodenum does exist. While it is likely that some or even many of the cases quoted in the earlier foreign literature may be instances of lacerations or contusions of the gastric mucosa rather than of true ulcers, yet a large majority of the citations refer to cases that answer all the postulates and may be accepted in good faith as characteristic specimens of ulcers.

The subject of traumatic peptic ulcer has great medico-legal importance. Much depends, in compensation cases of this type, on the evidence of expert witnesses and authorities. It behooves those that occupy such a position in the medical community of this country to acquaint themselves with the literature and with the facts, the better to be able to judge of the statements and evidence of opposing witnesses and lawyers in the interests of justice. The complainant should not be deprived of fair compensation because of ignorance of the facts on the part of the medical expert who is called on to answer the usual "hypothetical" question, nor should a malingerer be allowed to set up a false claim that cannot be intelligently rebutted by the experience and wisdom of learned medical authorities.

1075 Park Avenue—956 East Jersey Street.

28 Hurst A. F. and Stewart M. J. *Gastric and Duodenal Ulcer*. New York: Oxford University Press, 1929.

29 Einhorn Max. M. J. & Rec. 135:219 (March 2) 1932.

30 Liniger and Molineus quoted by Kessler H. H. *Accidental Injuries*, Philadelphia: Lea & Febiger, 1931.

**The General Practitioner and Therapeutics**—Medical students ought to be taught therapeutics just as thoroughly as they are now taught diagnosis or pathology. In connection with this one might have reason to hope that the general practitioner, who has ample opportunities for observing the therapeutic effects of drugs, might play a more important part in the advance of therapeutics than he has done for the last hundred years. Many observant general practitioners find out, as the result of their experiences, points about the effects of drugs or their side actions which may seem too insignificant to warrant publication. Though these points taken singly may seem of little importance, taken in the aggregate the experiences of the general practitioner, if they could be collected and assessed, would certainly assist greatly in the advance of practical therapeutics.—Gunn, J. A. *Remarks on the Outlook of Research in Therapeutics*, *Brit. M. J.* 2:391 (Aug. 27) 1932.

## THE TREATMENT OF AMEBIASIS WITH IODOCHLORHYDROXYQUINOLINE (VIOFORM N N R)

N. A. DAVID, M.D.

H. G. JOHNSTONE, Ph.D.

A. C. REED, M.D.

AND

C. D. LEAKE, Ph.D.

SAN FRANCISCO

Chiniofon N N R, which is sodium iodo-hydroxy-quinolinesulphonate, has been widely exploited under various trademarked names ("yatren," "anayodin") as a relatively nontoxic and supposedly efficient amebicide. It is amazing that there was until recently, so little critical experimental or clinical study of this compound, especially in comparison with other halogenated oxy-quinolines, of which there are many. Why was iodo-hydroxyquinoline selected for clinical exploitation from those halogenated oxyquinolines available for study when no evidence was furnished that it has demonstrable advantages over the others?

#### EXPERIMENTAL DATA ON IODOCHLORHYDROXY- QUINOLINE

As part of a comprehensive survey of the chemotherapy of amebiasis,<sup>1</sup> this compound was compared with hydroxyquinoline and certain of its halogenated

TABLE 1—Comparison of Biologic Activity of Iodochlorhydroxyquinoline (Vioform N N R) with Sodium Iodo-hydroxyquinolinesulphonate (Chiniofon N N R)

Biologic Activity	Iodochlorhydroxyquinoline	Chiniofon
Toxicity in guinea pigs on single oral administration	200 mg. per Kg. kills 13/20 guinea pigs within 4 days	600 mg. per Kg. kills 7/15 guinea pigs within 6 days
In vitro amebicidal concentration in 24 hours	Soluble HCl compound 1:10,000	1:500
Balantidicidal activity in naturally infected guinea pigs	Cured 80% at divided total dosage of 160 mg. per Kg. with 20% mortality	Cured 60% at divided total dosage of 600 mg. per Kg. with 40% mortality
Amebicidal effect in naturally infected macaques	Cured 7/8 at 100 mg. per Kg. for 10 days	Cured 2 at 500 mg. daily for 28 days; killed 2 at 2 Gm. daily for 10 days (J. F. Kessel)

derivatives from the standpoint of oral toxicity in guinea-pigs and cats, amebicidal action in vitro, and balantidicidal effect in naturally infested guinea-pigs. We noted an increase in toxicity with increasing halogenation of oxyquinoline and in proportion to the atomic weight of the halogen and a comparable increase in balantidicidal efficiency. A similar relation could not be established, however, with respect to amebicidal action in vitro. Of some eleven halogenated hydroxy-quinolines examined we concluded that iodochlorhydroxyquinoline was the most promising of the group for further study with the possible exception of diodo-

This report is based on part of an extended cooperative study of the chemotherapy of amebiasis conducted by the Pacific Institute of Tropical Medicine within the Hooper Foundation for Medical Research and the Pharmacological Laboratory of the University of California Medical School, San Francisco and supported in part by Eli Lilly & Co., Indianapolis and the Ciba Company, Inc., New York. Dr. L. L. Stanley permitted work at the San Quentin Prison and cooperated in carrying it on.  
1 Leake C. D. *Chemotherapy of Amebiasis* J. A. M. A. 98:195 (Jan. 16) 1932.

hydroxyquinoline, which is still under investigation. This confirmed a preliminary survey, the data on which have been published.<sup>2</sup> In monkeys naturally infested with *Endamoeba histolytica* iodochlorhydroxyquinoline was found to be more effective in nontoxic doses in completely and permanently clearing the stools than any mode of treatment yet reported on.<sup>3</sup> Its superiority to chiniofon N N R is indicated by the summarized data offered in table 1. On the basis of this evidence, we felt justified in making a critical clinical study of the effectiveness of iodochlorhydroxyquinoline in human amebiasis, especially since so many competent observers have reported good results with chiniofon,<sup>4</sup> although our clinical experience with the latter has been disappointing.

Iodochlorhydroxyquinoline is described in New and Nonofficial Remedies under the name "vioform" as an iodine containing dusting powder proposed as a substitute for iodoform.<sup>5</sup> It is a grayish-yellow powder with a faint aromatic odor, almost insoluble in water, sparingly soluble in alcohol but soluble in hot glacial acetic acid. It contains about 40 per cent iodine in comparison with 26 per cent in chiniofon, in addition to about 12 per cent chlorine. Some absorption of this drug occurs from the gastro-enteric tract, and it is excreted in part in the urine.

#### DOSAGE

For our dosage in human amebiasis we decided to begin with about one-tenth the dosage we found effective without any evidence of toxicity in monkey amebiasis. This averaged 0.75 Gm daily on the basis of 10 mg per kilogram for a 75 Kg person and was conveniently administered in capsules of 0.25 Gm each, given three times a day. We believe that twice this amount could be tolerated by the average individual without danger. As we found that 0.75 Gm daily for ten days, a total of 7.5 Gm, was not uniformly effective, we gave most of our patients a second such course of therapy after a rest period of a week to ten days following the first. This double course of iodochlorhydroxyquinoline therapy we found successful, as our data herewith reported indicate. We recommend that this dosage be used in chronic amebiasis cases without dysentery but that higher dosages be employed for severe cases.

#### UNTOWARD EFFECTS

With this course of treatment (0.75 Gm daily for ten days followed by a week's rest, after which 0.75 Gm daily was repeated for another ten days, for a total of 15 Gm in four weeks), we found no signs of toxicity nor unpleasant symptoms in any patient. Usually the patient's stools hardened after three or four days' treatment, and some constipation was noted. The stools presented a characteristic oily green appearance. This

may be used as an index of whether or not the patient takes the drug.

In rabbits killed by air injection after the oral administration of 100 mg per kilogram for ten days Dr James Rinehart of the Pathological laboratory of the

TABLE 2—Response of Amebiasis Patients to Treatment with Iodochlorhydroxyquinoline

Case	Weight Kg	Age	Total Dose Gm	Period of Therapy, Days	Follow Up Period, Months	No. Negative Stools in Follow Up Period	Symptom Response	Stool Response	Comment
1*	67	48	7.5	10	1	4	Good	Cleared	Recurrence 4 mos after therapy
			15.0	30	6	21	Excellent	Cleared	Recurrence 11 mos after therapy
2	17	5	2.0	10	10	0	Good	Cleared	
3	33	10	5.5	17	6	30	Excellent	Cleared	
4	40	31	15.0	37	5	21	Fair	Cleared	
5	54	43	15.0	33	5	18	Good	Cleared	
6	61	23	15.0	30	5	0	Good	Cleared	
7	61	59	15.0	30	0	14	Good	Cleared	
8†	17	4	2.0	10	3	6	Good	Cleared	Recurrence 3 mos after therapy
			3.25	15	3	5	Good	Cleared	Recurrence again in 3 mos
			3.75	10	4	6	Good	Cleared	
8†	27	10	3.2	15	0	12	Good	Cleared	
10†	53	35	7.5	10	1	3	Fair	Cleared	Recurrence 1 mo after therapy
			7.5	10	3	7	Fair	Cleared	Recurrence 3 mos after therapy
			10.0	30	4	0	Fair	Cleared	
11†	17	3	3.2	15	4	7	Fair	Cleared	Recurrence 4 mos after therapy
12†	58	20	15.0	37	2	8	Fair	Cleared	Recurrence 2 mos after therapy
13†	57	26	30.0	37	1	4	Fair	Cleared	Went on voyage
			1.0	37	2	0	Fair	Cleared	Recurrence 2 mos after therapy
14	60	38	15.0	37	3	11	Fair	Cleared	
15	50	58	7.5	10	1	3	Excellent	Cleared	Went on voyage
16	54	20	9.0	10	1	4	Excellent	Cleared	Went on voyage
17	50	19	20.0	32	1	4	Good	Cleared	Went on voyage
18	84	31	20.0	26	0	21	Good	Cleared	
19	61	32	15.0	26	0	21	None	Cleared	
20	82	41	15.0	26	0	24	None	Cleared	
21	72	32	15.0	26	0	24	Good	Cleared	
22	90	46	15.0	26	0	27	Good	Cleared	
23	70	20	15.0	37	5	21	None	Cleared	
24	80	20	10.0	37	0	24	Good	Cleared	
25	57	26	1.0	37	6	24	Good	Cleared	
26	64	31	7.5	10			Worse	None	Stools remained positive during therapy period
			10.0	10	5	21	Fair	Cleared	
27	64	22	15.0	25	0	20	Fair	Cleared	
28	60	23	15.0	25	0	20	Good	Cleared	
29	74	30	15.0	25	0	24	Good	Cleared	
30	70	27	10.0	25	5	30	Good	Cleared	
31	104	55	15.0	25	4	17	None	Cleared	
32	70	20	15.0	25	4	10	None	Cleared	
33	70	21	15.0	25	5	21	Good	Cleared	
34	72	30	15.0	27	5	15	None	Cleared	
35	64	19	15.0	25	4	18	None	Cleared	
36	71	24	15.0	27	4	21	Good	Cleared	
37	70	26	15.0	32	5	24	Good	Cleared	
38	76	20	15.0	32	4	20	None	Cleared	
39	65	40	15.0	32	4	18	None	Cleared	
40	72	21	15.0	32	4	10	None	Cleared	
41	72	36	15.0	32	4	22	Good	Cleared	
42	60	30	15.0	32	4	18	None	Cleared	
43	65	47	15.0	32	4	18	None	Cleared	
44	70	28	15.0	32	4	20	None	Cleared	
45	71	27	15.0	32	4	23	Good	Cleared	
46	80	20	15.0	26	7	18	Good	Cleared	
47	73	34	15.0	27	3	20	Excellent	Cleared	

\* Uncooperative subject to continued danger of reinfection from wife, who refused treatment.

† These patients were all members of the same family and were subject to constant danger of reinfection from friends and relatives, refusing treatment.

‡ Subject to reinfection from unhygienic environment beyond our control.

University of California Medical School could find no demonstrable gross or microscopic injury that could be attributed to the drug. However, in animals dying from a single dose of 250 mg per kilogram by mouth,

2 Anderson H H, David N A and Koch D A. Effects of the Halogenation of Oxyquinolines on Biological Activities. *Proc. Soc. Exper. Biol. & Med.* 28: 484 (Feb.) 1931.

3 Anderson, H H and Koch D A. Iodochloroxyquinoline (Vioform N N R) as an Amebicide in Macaques, *Proc. Soc. Exper. Biol. & Med.* 28: 838 (May) 1931.

4 Muhlens P and Menk W. Ueber Behandlungsversuche der chronischen Amöbenruhr mit Viatren. *München med. Wchnschr.* 68: 802 (June 30) 1921. Muhlens P. Fünf Jahre Behandlung der Amöbenruhr mit Viatren. *Arch. f. Schiffs u. Tropen Hyg.* 29: 491 1925. Jones, P H and Turner R H. Iodoxyquinoline Sulphonic Acid in the Treatment of Amebic Dysentery. *J. A. M. A.* 93: 583 (Aug 24) 1929. O'Connor F W and Hulse, C R. Treatment of Amebiasis with Anayodin. *Ann. Rep. 19 Med. Dept. United Fruit Company Boston 1930* p 64. Thonnard Neumann E and Valera F. *ibid.* p 68. Mackie T T. *ibid.* *Ann. Rep. 20 1931* p 112.

5 Dr C C Haskell of the Ciba Company Inc, New York kindly furnished generous supplies of iodochlorhydroxyquinoline for this study. We are grateful for his cooperation.

fatty infiltration and small necrotic areas were noted in the liver, and also some injury to the renal tubules was seen. These observations suggested that we watch our patients carefully for any indication of liver or kidney damage during and after iodochlorhydroxyquinoline therapy. We found no evidence of such injury in any case, however.

#### SOURCE OF PATIENTS TREATED

Two separate groups of patients, found infected with *E. histolytica*, have been treated with iodochlorhydroxyquinoline and observed over a considerable length of time. Since the conditions varied under which each group was treated, they are stated here, since more success in treatment was obtained with one group than with the other.

The first group (cases 1-17, table 2) comprised those seen in the outpatient departments of Mary's Help Hospital and the University of California Medical School in San Francisco. Four Filipinos are included who, although not clinic patients, worked in the university hospital and were found to harbor *E. histolytica* on routine examination. These patients were given the drug to take at home according to explicit directions, but some of them failed to follow their instructions properly.

The second group (cases 18-47, table 2) comprised a number of inmates at San Quentin Penitentiary found on the routine examination of new entrants to harbor *E. histolytica*.<sup>6</sup> These were treated under ideal conditions and probably for this reason our results were better. The drug was given in capsules to each man, who was required to swallow them in the presence of a trusted prison pharmacist. The likelihood of reinfection through infected food handlers in the prison we believe was practically eliminated, since early in our work at San Quentin a thorough survey of the mess force was made and men found harboring *E. histolytica* were changed to other positions and treated. In the San Quentin group a more satisfactory post-therapeutic stool follow-up was possible than in the clinic group.

#### THERAPEUTIC RESULTS

The data on the results of our treatment of forty-seven amebiasis patients by means of iodochlorhydroxyquinoline are summarized in table 2. Most of the patients received between 200 and 250 mg. of the drug per kilogram of body weight within about thirty days. The smallest effective dose was 120 mg. per kilogram in ten days in a 5 year old child (patient 2). The largest total dose was 600 mg. per kilogram in four and one-half months in an 18 year old Filipino (patient 12). Our criteria for the clinical effectiveness of antiamebic therapy have already been discussed.<sup>7</sup>

By reference to table 2 it may be noted that we had much greater recurrence of infection among the clinic patients (cases 1-17) than among the prison group (cases 18-47). We believe that this was due not so much to lack of effectiveness of the drug as to reinfection from relatives and friends not under observation or treatment, or to other unhygienic environmental factors difficult to control. The prison patients were under ideal control so far as possibility of reinfection was concerned, and it is significant that no recurrences of amebas have been found in this group on frequent stool

examination for several months after the treatment was stopped.

A satisfactory follow-up was carried out in all but four patients (12, 14, 15 and 16), who went to sea within a month after cessation of the treatment. Recurrences of amebas in the stools were noted in six of the clinic patients (1, 8, 10, 11, 12 and 13) within one to four months after drug administration was stopped. We have good evidence to believe that these were definite reinfections due to unhygienic environmental factors beyond our control. In one patient only (patient 26) the stools remained positive for *E. histolytica* during the first course of therapy with iodochlorhydroxyquinoline, but they cleared during a second course of treatment with a slightly higher dose and remained so.

Our results clearly indicate the importance of proper hygienic control of environmental factors in evaluating antiamebic therapy. When such control is possible, iodochlorhydroxyquinoline in the dosage used and recommended by us is a safe and very effective drug with which to treat human amebiasis.

#### CONCURRENT INFECTIONS

We found a total of thirty-two concurrent infections of *E. nana*, twenty-five of *E. coli*, nine of *Iodamoeba*, four of *Chilomastix*, ten of *Giardia*, and one each of *Enteromonas* and *Trichomonas*, as well as two combined infestations with hookworm and trichuris (cases 13 and 16).

Following treatment, there were twenty infections of *E. nana*, of which twelve were cases discovered during the follow-up examination and eight were cases unaffected by treatment. Similarly, five cases of *Giardia* were discovered after treatment, while of the five cases found before, only one failed to clear. Five cases of *E. coli* were discovered after treatment, while of the twenty previously found, all but four were eliminated by the drug. Of the nine cases of *Iodamoeba* and four of *Chilomastix*, only one each remained after treatment. *Enteromonas* in patient 4 was discovered after treatment. From these results it appears that iodochlorhydroxyquinoline may act as a protozoacidal agent in common intestinal infestations with the exception of *E. nana* and *Giardia*.

#### OTHER TREATMENT

Six of our forty-seven patients had previously been treated for amebiasis, but unsuccessfully. All six (1, 4, 7, 15, 46 and 47) had received emetine in full recommended doses with only temporary relief. Patient 7 had sixteen doses of emetine each of 60 mg. intravenously, followed by a total dose of 200 tablets of bismuth emetine iodide. Since the stools remained positive, he was given, six months later, another course of emetine therapy of nine intravenous injections of 60 mg. each. The stools, however, continued to contain *E. histolytica* until therapy with iodochlorhydroxyquinoline was instituted. Three patients (1, 46 and 47) had been treated by us previously with a variety of antiamebic agents, including emetine, acetarsone, chiniofon and carbarsone, but with unsatisfactory results. Patient 1, however, was uncooperative and continually exposed to reinfection. Two patients (25 and 26) were treated with arsphenamine for syphilis during the course of antiamebic therapy with iodochlorhydroxyquinoline.

#### SUMMARY

The clinical trial of iodochlorhydroxyquinoline (Vioform N N R) in human amebiasis is justified on

6 Johnstone, H. C., David, N. A., and Reed, A. C. A Protozoal Survey of One Thousand Prisoners, with Clinical Data on Ninety Two Cases of Amebiasis. *J. A. M. A.* 100: 728 (March 11) 1933.  
7 Reed, A. C., Anderson, H. H., David, N. A., and Leake, C. D. Carbarsone in the Treatment of Amebiasis. *J. A. M. A.* 98: 189 (Jan 16) 1932.

the results of its experimental chemotherapeutic comparison with sodium iodohydroxyquinolinesulphonate (Chimofon N N R). A total dose of 15 Gm given orally in two courses of 0.75 Gm daily for ten days with a week's rest period between appears to be effective in clearing the stools of *E. histolytica* in the average case of human amebiasis. The drug is conveniently dispensed in capsules of 0.25 Gm each.

In forty-seven unselected cases of human amebiasis, iodochlorhydroxyquinoline in the dosage recommended resulted in clinical "cure" in thirty-eight cases, as determined by frequent stool examination during a follow-up period of from three to six months. Six recurrences were found in seven patients subjected to continued danger of reinfection from infected friends or relatives refusing treatment. Three patients could not be followed longer than one month after treatment was stopped, but during this period their stools were free from amebas. No evidence of toxicity from the drug was noted in any patient.

Parnassus and Third avenues

## STUDIES IN CRETINISM AND HYPOTHYROIDISM IN CHILDHOOD

### I BLOOD CHOLESTEROL

I P BRONSTEIN, MD  
CHICAGO

This study on the basis of blood cholesterol has as its objective, first, the establishment of an additional method for regulating thyroid therapy and, second, an improved understanding of the clinical course of the thyroid deficient child. As these children are followed from month to month, it is apparent that the basal metabolic rate, as ordinarily determined by present methods in young children, is unreliable. The basal metabolic rate although valuable, is not a specific test and, as Du Bois<sup>1</sup> indicated in cretinism, the comparison with normal standards often presents great difficulties. The basal metabolic rate, therefore, should not be the principal guide in the progress of these patients. Furthermore, clinical impressions have many limitations.

In searching for an additional aid in determining the dosage of thyroid medication to a less empirical extent and the progress and prognosis in the thyroid deficient child, I had my attention called to the work done at the Lahey Clinic<sup>2</sup> with hypothyroidism and hyperthyroidism in adults.

The Boston investigators saw the advisability of getting a further laboratory aid to check on the severity of hypothyroidism or hyperthyroidism, since the basal metabolic rate did not always give a true picture, and the clinical impression was difficult to define. They found that patients with rates of —25 and cholesterol values of over 200 were benefited by thyroid medication. A striking relationship between hypothyroidism, blood cholesterol, basal metabolic rate and clinical improvement was observed.

In 1922, Epstein and Lande,<sup>3</sup> studying thyroid disorders, found low cholesterol values in hyperthyroidism and high values in hypothyroidism. These observa-

tions had experimental support, for when thyroidectomy was done in hyperthyroidism the blood cholesterol rose in value. In hypothyroidism, on the other hand, the administration of thyroid orally or thyroxine parenterally caused a fall in cholesterol.

Epstein attempted to demonstrate the existence of an inverse relationship between blood cholesterol and the basal metabolic rate. Such relationship was suggested to him because in nephrosis the cholesterol is high and the basal metabolic rate is low. That a definite inverse relationship exists is supported by the views of many workers.<sup>4</sup>

At the Lahey Clinic, forty-seven adults with hyperthyroidism and twenty-three with hypothyroidism were studied. In the former, the average cholesterol was 130 and the basal metabolic rate 51 plus. In the latter, the average cholesterol was 230 and the basal metabolic rate, —30. They concluded from their study that cholesterol reflected better the severity of hypothyroidism and the true clinical condition than does the basal metabolic rate.

French investigators<sup>5</sup> brought about a return of the blood cholesterol values to normal by means of thyroid preparations in clinical patients with hypercholesteremia. Many other investigators<sup>6</sup> found diminished values of cholesterol in exophthalmic goiter and the return to normal of this blood lipid following proper surgical or medical treatment. Likewise, these workers obtained increased values of blood cholesterol in thyroid insufficiency.

Contradictory reports are also available,<sup>7</sup> particularly as applicable to hyperthyroidism. Gextman,<sup>8</sup> from extensive studies in this field, concludes that the relationship between the basal metabolic rate and the cholesterol is true only in extreme cases of hyperthyroidism. Luden,<sup>9</sup> in thirty-five instances of exophthalmic goiter, found the cholesterol value to be within normal even when the basal metabolic rate was 100 plus.

Rabinowitch,<sup>10</sup> after a study based on 2,000 observations in 385 cases of diabetes mellitus, felt that the blood cholesterol was of greater value and more accurate than blood sugar as prognosticating the seriousness of the diabetes. The estimation of this so-called lipid, which is a relatively stable compound, is simple.<sup>11</sup>

Sure and Smith<sup>12</sup> found lipemia in experiments with vitamin B deficiency and felt that the chemical study of the blood lipids might serve as a yardstick by which to measure this avitaminosis.

Similarly, can cholesterol be regarded as an aid in the diagnosis of cretinism and hypothyroidism in childhood and as a guide to therapy?

4 Werner Gherta. *Compt. rend. Soc. de biol.* 100 928 (April 8) 1929. Shapiro, S. *J. Exper. Med.* 45 595 607 (April) 1927.

5 Levy, Max, and Levy M. (Mme.) *The Treatment of Hypercholesteremia with Thyroxine*. Bull. Acad. de méd., Paris 105 666 (April 21) 1931.

6 Hillman M. L. *Cholesteremia in Certain Diseases of Endocrine Glands*. Vrach delo 14 13 (Jan 31) 1931. Parhon C. I. and Derévié Hélène. *Compt. rend. Soc. de biol.* 95 787 (Sept 21) 1926. 99 246 248 (June 22) 1928. Bing H. J. and Heckscher, H. *Biochem. Ztschr.* 158 403 1925. Nicholls E. J. and Podzweig W. A. *J. Clin. Investigation* 5 195 204 (Feb.) 1928. Parhon C. J. and Parhon M. *Compt. rend. Soc. de biol.* 90 150 (Jan 25) 1924.

7 Wade, P. A. *Am. J. N. Sc.* 177 790 813 (June) 1929. Gardner J. A. and Gainsborough Hugh. *Brit. M. J.* 2 935 937 (Nov 24) 1928. Denis W. M. *Biol. Chem.* 29 93 (Feb.) 1917. Rothschild, Fritz and Jacobsohn Max. *Ztschr. f. klin. Med.* 105 403 405 1927.

8 Gextman. *Omsky med. J.* 2 161 1927.

9 Luden G. S. *Collected papers Mayo Clinic* 100 482 1918.

10 Rabinowitch I. M. *The Cholesterol Content of Blood Plasma in Juvenile Diabetes*. Arch. Int. Med. 43 372 (March) 1929.

11 Hawk, P. B. and Bergeim Olaf. *Practical Physiological Chemistry*. Philadelphia P. Blakiston's Son & Co. 1926. Bayliss W. M. *Principles of General Physiology*. New York. Longmans Green & Co. Peters J. P. and Van Slyke D. D. *Quantitative Chemical Chemistry*. Baltimore. Williams & Warren 1931. Bloor W. R. *J. Biol. Chem.* 24 227 (March) 447 (April) 1916. 25 577 (July) 1916. 29 437 (April) 1917.

12 Sure Barnett and Smith Margaret E. *Avitaminosis*, J. A. M. A. 97 301 302 (Aug 1) 1931. *Avitaminosis*. Arch. Int. Med. 40 397 (March) 1932.

From the Department of Pediatrics and the Research and Educational Hospital, University of Illinois College of Medicine.

1 Du Bois E. F. *Basal Metabolism in Health and Disease*. Philadelphia Lea & Febiger 1927.

2 Mason R. L., Hunt H. M. and Hurxthal, L. M. *Blood Cholesterol in Hypothyroidism and Hyperthyroidism*. New England J. Med. 203 1273 1278 (Dec 25) 1930.

3 Epstein A. A. and Lande Herman. *Studies on Blood Lipids*. Arch. Int. Med. 30 563 (Nov.) 1922.

Mindful that the exact mechanism regulating cholesterol metabolism is obscure, this investigation was undertaken for the purpose of determining the blood cholesterol relationship in thyroid deficient children, with the possibility of its use as a corroborating test in controlling thyroid dosage and maintaining metabolism at a normal level.

To establish an average blood cholesterol for the group considered in this paper, the values<sup>13</sup> of this lipid were determined in twenty hospitalized and five ambulatory children, ranging in age from 2 months to 11 years, twelve of these were boys, and thirteen, girls. Twelve of these patients were under 4 years and, of these, six were under 1 year. The determinations excluded nephrosis, nephritis, diabetes mellitus, purpura, anemias and blood dyscrasias, as well as other diseases in which cholesterol metabolism may be definitely altered. The average level of blood cholesterol in this group was 190 plus, the highest value was 217 in three instances, the lowest 129.

Boyd<sup>14</sup> regards any values in excess of 200 as indicative of hypercholesteremia. Leopold<sup>15</sup> in thirty-five normal children ranging in age from 3 to 12 years, found an average blood cholesterol of 173. Rabinowitch, in forty-four children under 14 years of age, found the blood cholesterol values to be similar in range to those found in normal adults. McEachern and Gilmour<sup>16</sup> found in twenty-eight adults the normal values to range between 130 and 200 mg. The literature<sup>17</sup> includes many other reports of blood cholesterol in infants and older children.

Hypercholesteremia is existent in the children in this study. Of the present series, eight are boys and four are girls, ranging in age from 3 months to 16 years. The highest cholesterol values in these children when they were not receiving thyroid varied as follows: 277, the lowest, in the 4 month old male cretin, from 312 to 384 in five, 416 to 454 in three, 625 in one, and 782, the highest reading, in the 13 year old female cretin. In one of the patients the cholesterol was not obtained, since the child was in the hospital before the present study. At no time would his parents allow the withdrawal of thyroid for a short period to determine the cholesterol when not under treatment. This boy had on admission three epiphyseal centers and, in less than one year under therapy, eight epiphyseal centers appeared.

The average cholesterol value of our group under treatment is 171, the only determination above 200 being in J. S., a boy, aged 3½ years, whose carpal bones showed at the onset of treatment ossification equivalent to a 1 year old child. It was impossible to obtain a basal metabolic rate of sufficient accuracy and satisfaction in this patient. He had received three-fourths grain (0.05 Gm.) of thyroid a day prior to admittance, at which time his cholesterol was 227. After several weeks without thyroid, his cholesterol rose to 313, and when he received treatment the cholesterol fell 96 points.

When it is impossible to obtain basal metabolic rates in older children, owing to unmanageability, or in infants because of lack of enclosed respiratory chambers, cholesterol determinations may serve as contributory aids.

This was demonstrated in M. B., a boy, aged 4 months, in whom we were unable to determine the basal metabolism. He entered the hospital with a cholesterol of 156, having received medication at another institution. The patient possessed a suggestive facies, macroglossia and a characteristic croak. After a short period without thyroid, the cholesterol rose to 277. Since at first there was slight uncertainty as to his being a cretin the rise in cholesterol helped the decision, and at present he presents features diagnostic of thyroid deficiency.

It should be borne in mind that the majority of these children were under treatment before this study began and as it is impossible to keep these children off thyroid for too long periods without serious parental objections these cholesterol determinations may not represent the maximum high values. However, merely keeping thyroid away for short periods in a previously treated child with low cholesterol brings not only a return of hypothyroid characteristics but a definite rise of cholesterol as well.

G. M., a boy, aged 9½ years, had been under treatment previous to the undertaking of this study. It was not quite clear that he was a cretin, but after two months without treatment he presented typical characteristics.

April 12, 1932 up to which time he had been receiving from 2 to 3 grains (0.13 to 0.2 Gm.) of thyroid a day, it was decided to stop thyroid. At this time his cholesterol was 156, the basal metabolic rate was plus 47, the pulse 94, and the weight 58¾ pounds (26.6 Kg.). In the two months that thyroid was withheld, his weight rose to 65¾ pounds (29.5 Kg.), a gain of 6¾ pounds. The cholesterol rose to 454, a change of 298 points, the basal metabolic rate fell 58 points, and the pulse fell 40 points. When thyroid (2 grains daily) was started, the cholesterol fell to 172, a change of 282 points, the basal metabolic rate rose 48 points, the pulse rose 42 points and he lost 5¾ pounds. After the two months without medication, the hair had grown coarse and the abdomen large, and myxedema appeared.

Without becoming involved in speculation as to the cause for the excess of this so-called lipid, it might be said that a relationship exists between cholesterol, the basal metabolic rate, and thyroid dosage. For the purpose of ascertaining whether a definite quantitative relationship can be demonstrated, two cretins are now being studied and will be the subject of another paper.

A. B., a boy, aged 13, entered the hospital with a cholesterol of 454 and a basal metabolic rate of -41. The bony development of the wrist was that of a 5 year old child. In fifteen days on approximately 1 grain (0.065 Gm.) of thyroid daily, the cholesterol fell to 200 and the basal metabolic rate rose to 0.

At this time I was interested in the possibility of influencing cretins by other means, as for example insulin, as suggested by Chamberlain,<sup>18</sup> since insulin will diminish the hypercholesteremia in diabetes. The pancreatic hormone was used for forty-three days, during which period thyroid was stopped. The cholesterol rose from 200 to 454 and the basal metabolic rate fell from 0 to -35. When thyroid was again instituted the cholesterol fell to 208, a fall of 246 points,

13 Bloor W. R., Pelkan K. F. and Allen D. M. Determination of Fatty Acids (and Cholesterol) in Small Amounts of Blood Plasma. *J. Biol. Chem.* 52: 191 (May) 1922.

14 Boyd G. L. Blood Cholesterol in Diabetic Children. *Am. J. Dis. Child.* 38: 490 (Sept.) 1929.

15 Leopold J. S., Bernhard, Adolph and Tow Abraham. Changes of the Blood Lipoid in Children. *Am. J. Dis. Child.* 43: 882 (April) 1932.

16 McEachern J. M. and Gilmour C. R. *Canad. M. A. J.* 26: 30 (Jan) 1932.

17 Manciatide M., Bratesco A. and Rusesco A. *Compt. rend. Soc. de biol.* 68: 1240 (May 13) 1927. Strathmann Herweg H. *Monatschr. f. Kinderh.* 19: ix 1920 1921. Baylac J. and Sendrail M. *Bull. et mém. Soc. med. de hop. de Paris* 52: 33 (Jan 19) 1928. de Toni Giovanni. *Pediatrics* 33: 987 (Sept. 15) 1925.

18 Chamberlain E. M. Significance of Cholesterol in Physiology and Pathology. Consideration of Selected Problems. *Brit. M. J.* 2: 896-898 (Nov 16) 1929.

and the basal metabolic rate gradually rose 71 points. In the course of a little over two weeks the thyroid was rapidly increased from 1 to 8 grains (0.065 to 0.5 Gm) and the patient was kept on this large dose for a short period following which improvement in his appearance and mental reaction took place.

The relationship between cholesterol and the basal metabolic rate is further shown by J. F., a boy, who, Feb. 12, 1932, had a cholesterol value of 143 and a basal metabolic rate of plus 69. This child returned, April 30, after an absence of eleven weeks during which time he had received 3 grains of thyroid for seven weeks,  $1\frac{1}{2}$  grains (0.1 Gm) for two weeks while ill with chickenpox, and no thyroid for another period of two weeks. The cholesterol now was 238, having risen 95 points, and the basal metabolic rate was —3, a fall of 72 points. In addition to the cholesterol rise and the basal metabolism fall the abdomen had enlarged, the hair was coarse, and the boy was sluggish, symptoms not present eleven weeks earlier.

Incidentally, as work goes along with this interesting substance many problems arise, as for instance the determination of a maximum amount of thyroid beyond which it is useless to proceed, because improvement has reached its physiologic limit. J. F. exemplifies this, as he seemed to do just as well on 2 grains of thyroid as on 3 grains, although he showed no toxic signs on the increased dosage.

The possible use of blood cholesterol as an index in the regulation of thyroid dosage is evidenced by A. K., a girl, who had been under treatment for one year before the present work was started. She had entered the hospital in October 1930, with an admission cholesterol of 782 and a basal metabolic rate of —6. Thyroid therapy was instituted, starting with three-fourths grain and gradually increasing to 3 grains a day. During her stay in the institution the cholesterol fell to 179 and the basal metabolic rate rose to plus 77. After she left, the thyroid was fed irregularly.

She again came under observation, Oct. 6, 1931, at which time the basal metabolic rate was plus 69, the cholesterol 417, and she was receiving  $1\frac{1}{2}$  grains of thyroid daily. She had gained weight, the temperature was subnormal and her parent stated that she was irritable. The high cholesterol value, however, attracted attention, and because of this the thyroid was increased, the basal metabolic rate being disregarded. The result was clinical improvement, with the basal metabolism remaining at the same level, and a fall in cholesterol to 227.

#### COMMENT

A relationship exists between hypercholesteremia and hypothyroidism in adults, as is indicated in a review of the literature. It was undertaken to ascertain the presence of a similar relationship in hypothyroidism of children.

The blood cholesterol was determined in twenty-five children in whom no known derangement of cholesterol metabolism was present, and the average was found to be 190 plus. This value for normal cholesterol is substantiated by the work of other investigators in this field.

Hypercholesteremia was found in the twelve thyroid deficient children studied. The values ranged from 277 to 782. Thyroid therapy definitely lowered the blood cholesterol in the cases cited, in addition to raising the basal metabolic rate and effecting clinical improvement.

It is desirable to have an additional method for the diagnosis and treatment of thyroid deficient children,

particularly in infants and borderline cases. The use of cholesterol as an aid in the diagnosis and regulation of thyroid dosage offers definite possibilities.

1819 West Polk Street

## A NEW SIGN OF PERICARDIAL EFFUSION

ELI MOSCHCOWITZ, M.D.

NEW YORK

The determination of moderate quantities of fluid within the pericardial cavity by physical diagnosis is too often indecisive. Even the roentgenologic diagnosis is by no means infallible. Of all the evidences that are conventionally employed I have found that the conjunction of three signs is usually conclusive in determining the diagnosis of pericardial effusion in the order of their importance they are (1) widening of the area of cardiac flatness, (2) abrupt transition from pulmonary resonance to cardiac flatness and (3) widening of the cardiac dulness in the second intercostal space. Of these three signs, only the second, so far as I can gather has not been described before. No one of these signs, taken singly, is conclusive, but together they form a triad which is thoroughly reliable, as confirmed by roentgen examination or at autopsy.

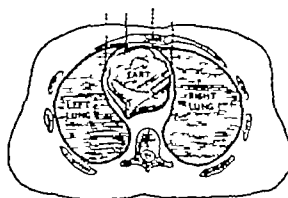


Fig 1—Schematic representation of cross-section of normal chest (After Braune, C. W. *Topographisch anatomischer Atlas* Leipzig: Veit & Co. 1886-1888.)

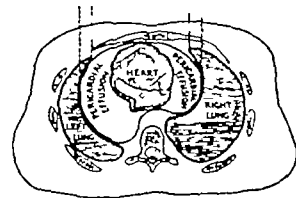


Fig 2—Schematic representation of cross-section of chest with pericardial effusion. (After Conner, L. A. *Am. Heart J.* 1: 421-433 [April] 1926.)

The physical basis for these signs is obvious. The normal area of cardiac flatness is comparatively small, it rarely extends beyond the left border of the sternum, and from this line it extends to the left to within 2 cm of the nipple line (fig 1). When the heart is enlarged, this area obviously increases, but even when the heart is greatly enlarged, as for instance in the bovine hearts of aortic insufficiency, the area of flatness rarely attains the size witnessed in pericardial effusions of even moderate grade. On percussion, it is most unusual for an enlarged heart to give a flat sound up to the right border of the sternum into the right side of the chest. The determination of the left outline of the area of cardiac flatness is of less significance. Broadly speaking, therefore, when an area of cardiac flatness extends to the right border of the sternum, a pericardial effusion is suggested.

The abrupt transition of pulmonary resonance to cardiac flatness is due to the practical disappearance of the lung-filled angle between the heart and the anterior wall of the chest owing to the greatly dilated pericardial sac (fig 2).

The acuteness of the angle subtending the border of the lung, on the one hand, and the extreme edge of the pericardial sac, on the other, determines the area of

cardiac dullness, which normally is from about 2 to 3 cm in width. As this angle is almost completely obliterated in pericardial effusions, the normal circumferential zone of cardiac dullness becomes reduced to almost nothing, and the abrupt transition of pulmonary resonance to flatness is the consequence. To determine this sign, deep percussion is essential.

The widening of the cardiac outline in the second intercostal space is merely another evidence that pericardial effusions have a pronounced tendency to accumulate at the base of the pericardial sac. This widening is confirmatory of one of the important diagnostic criteria of pericardial effusions in roentgen diagnosis, namely, the increased widening of the cardiac shadow at the apex of the cardiac triangle.

## NICOTINE POISONING BY ABSORPTION THROUGH THE SKIN

JAMES M. FAULKNER, M.D.

BOSTON

Nicotine is one of the most deadly poisons known to man and, at the same time, one with which he comes into most intimate contact in his daily life. It is somewhat surprising, therefore, that serious cases of nicotine poisoning are not reported more frequently. The main reasons for the infrequency of serious poisoning are that the percentage of nicotine in tobacco is too small to make it easy to get a fatal dose from the ingestion of tobacco or the inhalation of its smoke and that nausea and vomiting are early symptoms which ordinarily prevent further absorption of the drug. Fatal poisoning from tobacco, although rare, has been reported from smoking, from swallowing tobacco from tobacco enemas, and from its use as a local application to the skin in favus.<sup>1</sup> The commercial insecticides that contain high percentages of nicotine are of course, far more dangerous. McNally<sup>2</sup> has reported seven fatal cases of nicotine poisoning from the drinking of an insecticide, two of these were accidental, and death occurred within five minutes in each case. The widespread use of nicotine solutions as sprays in greenhouses would lead one to expect cases of poisoning among gardeners. A number of florists of wide experience with whom this was discussed were unanimous in declaring that they had never heard of a case of serious nicotine poisoning. That such may occasionally occur, however, is shown by several recent reports of poisoning in gardeners.

Wilson<sup>3</sup> reports an instance of moderately severe nicotine poisoning in two gardeners who had been painting peach trees with a 27 per cent solution of nicotine and in so doing had splashed their hands, forearms and faces with the solution. In these cases absorption apparently took place through the skin.

Fretwurst and Hertz<sup>4</sup> report a case of mild poisoning in a gardener who was spraying a tree outdoors with a 20 per cent nicotine solution. In addition to the well recognized symptoms of vomiting, prostration and

loss of tendon reflexes, these observers also demonstrated an increase in the blood sugar to 175 mg per hundred cubic centimeters, leukocytosis, and inversion of the T waves in the electrocardiogram. Nicotine was recovered from the urine. In this case absorption was apparently through the lungs.

Lockhart<sup>5</sup> describes an instance of severe poisoning in a girl employed in the manufacture of a nicotine insecticide. Two drachms (7.5 cc) of a 95 per cent solution of nicotine was spilled on the sleeve of her overalls. She immediately removed the overalls, washed her arm with hot water, wiped off the sleeve, put the overalls on again and returned to work. Twenty minutes later she collapsed. She was pallid, cold, speechless and "practically pulseless." For half an hour she appeared to be on the verge of death but finally recovered. Traces of nicotine were recovered from vomitus obtained three hours later. In this case absorption was clearly through the skin.

The following case is an example of severe nicotine poisoning as a result of absorption through the skin.

A man, aged 35, American, a florist, was seen in consultation for an insurance company, Oct. 24, 1932. His past history was irrelevant except for the fact that he had been in the habit of smoking three or four pipefuls of tobacco daily and that he had frequently used diluted nicotine solutions in spraying plants without serious symptoms. Oct. 4, 1932, he came into contact with a concentrated solution of nicotine in the following manner.

While engaged in doing a light electrical repair job at a work bench he sat down in a chair on the seat of which some 'Nico Fume Liquid' (a 40 per cent solution of free nicotine) had been spilled. He felt the solution wet through his clothes to the skin over the left buttock, an area about the size of the palm of his hand, and recognized what it was by its characteristic odor. He thought nothing further of it, however, and continued at his work for about fifteen minutes, when he was suddenly seized with nausea and faintness. He took a drink of water and immediately vomited and continued to retch. He stepped outdoors and found himself in a drenching sweat. His respirations became labored and painful, a physician was called, and he was sent to a hospital in an ambulance. On the way to the hospital he lost consciousness and did not recover until three hours later. During this period he was described by the intern as being semicomatose, writhing, moaning and having rapid irregular gasping respirations. The heart beat was described as 'very irregular, at a rate of 86 per minute,' the rectal temperature was 95.6 F, and respirations were 40 per minute. The blood pressure was 110 systolic and 45 diastolic. The pupils were pin-point in size. The pulse was feeble and the extremities were cold. No tendon reflexes could be elicited. There was no local skin reaction over the buttock. The urine had a specific gravity of 1.018, with a 'slightest possible trace' of albumin, 2 per cent sugar and a large amount of acetone. The urinary sediment showed from three to five white blood cells per high power field but no red blood cells or casts were found. He was given 1 ampule of caffeine sodiobenzoate subcutaneously and kept warm with hot water bottles and blankets. The respirations continued labored throughout the night. Six subsequent urine specimens voided that night and three the next day were negative for sugar.

The following day his symptoms had disappeared except for a feeling of subnormal pressure, weakness and slight nausea. The irregularity of the heart continued but caused no subjective symptoms. He was discharged from the hospital on the fourth day. On discharge from the hospital he was given the same clothes that he had worn when he was brought in. The clothes had been kept in a paper bag and according to the patient were still damp where they had been wet with the nicotine solution. Within an hour after leaving the hospital he was again seized with nausea, vomiting, sweating and difficulty in breathing and was readmitted to the hospital. He showed no change in physical signs except for profuse sweating and apparent dysp-

From the Thorndike Memorial Laboratory, Second and Fourth medical services (Harvard) of the Boston City Hospital and the Department of Medicine of the Harvard Medical School.

1 McNally, W. D. Nicotine Poisoning. *J. Lab. & Clin. Med.* 5: 213 (Jan.) 1920 (for bibliography).

2 McNally, W. D. A Report of Seven Cases of Nicotine Poisoning. *J. Lab. & Clin. Med.* 8: 83 (Nov.) 1922.

3 Wilson, D. J. B. Nicotine Poisoning by Absorption Through the Skin. *Brit. M. J.* 2: 601 (Oct. 11) 1930.

4 Fretwurst, F. and Hertz, A. Akute Nicotinvergiftung. *Ztschr. f. klin. Med.* 122: 641 1932.

5 Lockhart, L. P. Nicotine Poisoning. *Brit. M. J.* 1: 246 (Feb. 11) 1933.

nea. The temperature was 99.6 F, pulse rate 84 and respiration rate 20 per minute. There was no sugar in the urine. He remained in the hospital for four more days. When first seen by me, three weeks after his accident, his symptoms consisted of weakness, sweating, vertigo on change of position, insomnia, nervousness and a mild, constant substernal pressure not aggravated by exertion. All of these symptoms gradually cleared up in the course of the following three weeks, although extrasystoles were constantly present on repeated examinations. Electrocardiograms showed that the extrasystoles were arising from two different foci in the ventricle. The significance of these extrasystoles is not clear. They were still present in undiminished frequency three and one-half months after the poisoning, but they have never produced subjective symptoms and may have been present previously.

The patient appeared to be in the best of health at his last examination three and one-half months after the accident. His only complaint was that he was unable to go into a greenhouse in which the nicotine spray was being used without suffering immediate nausea. He was however able to enjoy five or six pipefuls of tobacco a day so that it does not seem likely that he had become unduly sensitive to the effects of nicotine.

Since reported cases of nicotine poisoning are not common it may not be amiss to point out that this patient's symptoms are quite characteristic of the con-

*Skin Absorption of Nicotine Insecticides in Cats*

Name	Experi- ment No	Weight in Kg	Dose in Cc	Symptoms
Nico-Fume Liquid (40% free nicotine)	1	2.7	10	Rapid, shallow respirations convulsive twitchings death in 21 minutes heart and respira- tions stopped simultaneously
	2	4.5	10	Rapid irregular respirations convulsive twitchings vomiting generalized convulsions respira- tions slowed respirations stopped in 20½ minutes heart stopped in 28 minutes
	3	2.0	3	Rapid, shallow respirations convulsive twitchings gasping respirations heart stopped in 73 minutes
	4	1.8	3	Rapid shallow respirations convulsive twitchings gasping respirations stopped in 94 minutes heart stopped in 98 minutes
	5	2.8	2	Rapid shallow respirations twitching apparent uncon- sciousness after 8 hours the nicotine solution was washed off animal appeared well next day then vomited refused food and died after 7 days
Black Leaf 40 (40% nicotine sulphate)	1	3.7	10	No effect
	2	3.5	10	No effect
	3	3.5	10	No effect

dition. The classic features are sweating, nausea, vomiting, dyspnea, coma, convulsive seizures, pin-point pupils, a pulse rate that is at first slowed and later accelerated, subnormal temperature, absence of tendon reflexes, polymorphonuclear leukocytosis, increased blood sugar with glycosuria and electrocardiographic signs suggesting a toxic effect on the myocardium. Nicotine may be demonstrated in the urine.

"Nico-Fume Liquid" is, according to the manufacturer, a "forty per cent water solution of commercial (free) nicotine, there being no other substance of an insecticidal nature present than the nicotine."<sup>6</sup>

In the case here cited, poisoning unquestionably occurred by absorption of nicotine through the skin.

While this mechanism has long been recognized by pharmacologists, it does not appear to be regarded as a hazard by florists who use concentrated nicotine solutions extensively as insecticides. Indeed, the containers in which "Nico-Fume Liquid" is sold freely to the public bear no warning as to the dangers of skin absorption. It appeared worth while, therefore, to investigate the effect of the application of "Nico-Fume Liquid" to the skin of lower animals.

Five experiments with cats were carried out. The procedure in each instance was as follows:

The unanesthetized animal was fastened on its back to a board. The fur over the lower part of the abdomen was cut short with scissors but the skin was not shaved or traumatized in any way. A measured amount of "Nico-Fume Liquid" was poured on the skin and very gently sopped and rubbed in with the gloved finger to make sure it was in contact with the skin. The area of skin wet with the solution was from 5 to 7 cm in diameter in each case. The wet area was then covered with an inverted glass dish held down tightly with adhesive tape to prevent the fumes from escaping.

The results of the experiments which are briefly summarized in the accompanying table indicate that free nicotine may be readily absorbed through the intact mammalian skin. As little as 3 cc of a 40 per cent solution applied to the skin of a cat may be rapidly fatal. Since nicotine in the form of a solution of nicotine sulphate is also widely used as an insecticide, it seemed advisable to investigate its properties in regard to skin absorption. Accordingly, an insecticide known as "Black Leaf 40" containing 40 per cent of nicotine sulphate was employed in the same manner. Ten cubic centimeters of this solution applied to the cat's abdominal wall produced no effect whatever in three different animals. One of these cats was subsequently exposed in the same way to the same dose of "Nico-Fume Liquid" to which it promptly succumbed. The difference in skin absorption between the solution of free nicotine and the sulphate is in keeping with differences noted in skin absorbability between other alkaloids and their salts.

If concentrated free nicotine solutions are as dangerous as indicated by the experimental work and the clinical case here reported, the question arises as to why poisoning is not more frequently encountered. The answer lies in the fact that the concentrated solution has a most offensive odor, appearance and consistency. It is a very dark brown slimy fluid with a peculiarly nauseating odor. For these reasons even a careless person would not allow it to remain in contact with his person except under unusual circumstances, as in this case, in which it would have been necessary for the man to remove his clothes. Furthermore the solutions are ordinarily highly diluted for insecticidal purposes, the concentrated solutions being made up merely for convenience in shipping and handling.

#### SUMMARY

A case of nicotine poisoning resulted from accidental absorption through the skin of a widely used insecticide containing 40 per cent of free nicotine. In experiments with cats it was found that small amounts of this substance applied to the intact skin were readily absorbed with fatal results. It was observed that a similar insecticide containing 40 per cent of the sulphate salt of nicotine produced no toxic symptoms when applied to the skin of the cat.

264 Beacon Street.

<sup>6</sup> Quoted from a letter from the manufacturer (Tobacco By Products and Chemical Corporation) in response to an inquiry from the Chemical Laboratory of the American Medical Association.

## RESPIRATORY FAILURE AND THE DRINKER RESPIRATOR IN POLIOMYELITIS

EMIL SMITH, M.D.

BROOKLYN

During and following the epidemic of poliomyelitis in 1931, numerous additions have been made to the literature of this subject. My purpose in this paper, based on a study of thirty-six cases is to record observations made in cases of poliomyelitis culminating in paralysis of the respiratory muscles, to delineate the clinical picture when respiratory paralysis is fully established, to outline the results of treatment with the use of the respirator, and, finally, to describe the indications for removing the patients from the Drinker apparatus.

### TYPES OF PARALYSIS AFFECTING THE RESPIRATORY APPARATUS

1 *Ascending Paralysis*—Most of the cases of poliomyelitis leading to respiratory involvement begin with paralysis of one or both of the lower extremities. Thirty-five of the thirty-six patients in this series presented an initial weakness of the lower extremities followed by absent knee jerks and complete flaccidity of these limbs. Several hours later the cremasteric and abdominal reflexes disappeared, and within twenty-four hours the intercostals, the diaphragm and the upper extremities became involved.

2 *Descending Paralysis*—The paralysis may begin with weakness of the shoulder muscles followed by flaccid paralysis of both upper extremities, and within a very short time the diaphragm may become involved. In the last instance, respirations are carried on by the intercostals and the accessory muscles of respiration. When the patient lies quietly in bed and is covered, little respiratory embarrassment may be noted, the color is good, respirations are apparently fair and the alae nasi barely dilate. However, on careful examination one will find the abdomen retracting on inspiration and forced out on expiration. This picture is more pronounced when the patient exerts himself. In one patient, paralysis spread downward and involved the intercostal and abdominal muscles and both lower extremities. The descending type of paralysis is rare.

3 *Ascending-Descending Paralysis*—The paralysis may begin in one lower and one upper extremity. Gradually, both upper and both lower extremities become involved, and the infection continues to spread downward and upward simultaneously, ultimately producing intercostal, diaphragmatic and abdominal paralysis. The ascending-descending type of paralysis is also rare and comprises one case in this series.

### RESPIRATORY PARALYSIS FULLY ESTABLISHED RESPIRATOR INDICATED

The clinical picture changes the child lies in bed motionless, the eyes have a fearful stare, the face is dusky, the lips are cyanotic, the alae nasi dilate with every inspiration, the accessory muscles of respiration, especially the sternocleidomastoid, become visible with every inspiration, speech is difficult, quick and whispered, the sentences are short and broken up by inspirations between words and occasionally between

syllables, respirations are extremely shallow, the chest and the abdomen are practically vibrationless, the temperature steadily rises and may attain 105 F, the pulse progressively mounts, the child perspires freely, sleep is impossible and the patient may remain awake for days, growing weaker by the hour. If respirator aid is not forthcoming and the patient is allowed to remain in this condition long enough, the accessory muscles of respiration, particularly the sternocleidomastoids, may pull the clavicles out of the sternoclavicular joints and the patient may finally die of exhaustion.

A boy, aged 16 years, was admitted with respiratory muscle paralysis, breathing by means of the accessory muscles of respiration, chiefly the sternocleidomastoids. No respirator was available for forty-eight hours. In that time there occurred a dislocation of the sternal head of the right clavicle, evidently pulled out of place by the right sternocleidomastoid muscle.

### THE EFFECT OF THE DRINKER RESPIRATOR ON RESPIRATORY PARALYSIS

Immediately after the patient is placed in the respirator, cyanosis disappears and the face assumes its natural color. The facial expression is that of satisfaction and appreciation. For the first few minutes the patient's breathing is out of rhythm with the respirator. This is indicated by the pull of the accessory muscles of respiration of the neck, by the dilatation of the alae nasi, and by the mouth being kept open, presumably swallowing air. However, the rhythm between the patient's breathing and the respirator soon becomes synchronous and the patient falls into a profound sleep, which may last for twenty-four hours or more. When he awakens, he takes fluids readily and soon learns to swallow solid food. Henceforth the patient becomes a nursing problem until such time as he is ready to be removed from the machine. In the Kingston Avenue Hospital series we treated fourteen cases of this type.

### FACTS ABOUT THE RESPIRATOR

There are two facts about the respirator that should not be overlooked. They are:

1 *Negative Pressure*—When the respirator was first used all patients, regardless of age, were placed into it on 15 cm of negative water pressure, as suggested by Professor Drinker.<sup>1</sup> The first two patients did well. The third patient, after several days in the respirator suddenly became cyanotic, the synchronism of rhythm between the patient's breathing and the respirator was lost, the temperature rose to 103 F and the pulse to 170. Physical examination showed no evidence of cranial nerve involvement, and the patient swallowed well. The chest was resonant to percussion and auscultation revealed crepitant rales over both bases posteriorly. The sudden change in the patient's condition was therefore attributed to bilateral bronchopneumonia, proved at postmortem examination. These three patients were side by side under the same nursing care, under the same atmospheric conditions, in exactly the same type of respirator and under the same negative pressure and respiratory rate. The exciting factor causing the bronchopneumonia remained obscure. To avoid similar recurrences, all patients under 10 years of age were started at 10 cm of negative water pressure. This was increased 1 cm every three to four days to a level most comfortable to the patient, which was never

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From the services of Drs. Harold L. Barnes and Alexander Spingarn,  
Kingston Avenue Hospital for Contagious Diseases.

<sup>1</sup> Drinker, Philip and McKhann, C. F. The Use of a New Apparatus for the Prolonged Administration of Artificial Respiration. A Fatal Case of Poliomyelitis. J. A. M. A. 92: 1658 (May 18) 1929.

higher than 15 cm. Following this procedure, not a single patient developed bronchopneumonia while in the respirator.

**2 Respiratory Rate**—There are two types of the Drinker respirator commonly in use at present.<sup>2</sup> The old type has three speeds of respirations: 15, 30 and 45 times a minute; the new type has respiratory rates of 15 and 30 a minute. It is important that patients requiring respiratory aid should be placed in a respirator at a rate equivalent to the normal respiration. The following incident illustrates this point.

An infant under 1 year of age died in a respirator set at 45 respirations a minute. Immediately afterward an adult, aged 18, developed respiratory muscle paralysis and was placed in the same respirator. But the physician on duty failed to move the alternator on the respirator to 15 respirations a minute. Three minutes later the patient became cyanotic, developed tonic spasms of the face and jaw muscles and went into coma. The physician opened the respirator and discovered his mistake. He moved the alternator to 15 respirations a minute, closed the respirator, and henceforth the patient did well. The phenomenon was explained on the basis of hyper-ventilation causing an alkalosis.

#### PROGNOSIS IN CASES OF RESPIRATORY MUSCLE PARALYSIS

The fate of a given patient placed in the respirator cannot be determined for some time in spite of the apparent improvement during the first few hours. At this stage of the disease, one cannot foretell whether the infection will be arrested below or above the bulb, or whether it will continue on to the cerebrum. The temperature and pulse rate are of no prognostic importance. The general appearance of all cases is almost identical. They may remain with pure intercostal and diaphragmatic paralysis or they may go on to (a) Landry's paralysis or (b) bulbospinal paralysis.

(a) *Landry's Paralysis*—All patients destined to develop Landry's paralysis show slight improvement for the first few hours in the respirator. These patients may then be divided into two groups. The patients in the first group become progressively worse and die within twelve to twenty-four hours; the patients in the second group linger for several days and then die. The terminal picture of the patients in the two groups is almost the same: their faces become dusky, the lips cyanotic, the eyes roll back and the eyelids remain half open. The general appearance is that of extreme anguish. The breathing is out of rhythm with the respirator, the alae nasi dilate, mucus accumulates in the mouth, and sleep lasts for ten minutes only. During this period the patients remain mentally clear. Finally they develop unilateral or bilateral facial twitchings and gradually sink into coma. The temperature rises to 105 F or higher, the pulse becomes rapid, thready and irregular, the patients vomit and finally die. There were seventeen cases in this group.

(b) *Bulbar Symptoms Superimposed on Intercostal Diaphragmatic Paralysis*—There are two groups of cases in this division that deserve special consideration. The first group comprises cases of intercostal and diaphragmatic paralysis along with bulbar symptoms, the most prominent of which is inability to swallow. The second group shows the same intercostal paralysis without disturbances in swallowing but with paralysis of some of the bulbar and cranial nerves, the com-

monest being the facial, part of the vagus, the glossopharyngeal and the spinal accessory.

**Group 1** The patients in group 1 when placed in the respirator for the first few hours, show the improvement described. Shortly afterward bulbar nerve palsies may supervene on intercostal diaphragmatic paralysis. The signs and symptoms that these cases present depend on whether the involvement is unilateral in the bulb or bilateral. When the paralysis is unilateral, there is difficulty only in swallowing and the patients require no therapeutic aid except artificial respiration which the respirator ably supplies. These patients have an excellent chance to survive. When the paralysis in the bulb is bilateral and it is more frequently so, swallowing becomes impossible; the fluids regurgitate through the nose and saliva drools from the mouth. These cases invariably prove fatal. The patients do not die from paralysis of the respiratory center since they go on breathing in the machine long after the heart stops. The cause of death in my opinion, is paralysis of both vagal nuclei and the terminal picture suggests this explanation. The patients become drowsy, somewhat cyanotic and vomit. Tachycardia and irregularity of the heart supervene. Respirations are slow and irregular and out of rhythm with the machine and are carried on by the accessory muscles of respiration of the neck. The soft palate reflex and the oculocardiac reflex are lost.

Therapeutically, a great deal may be done for these patients but with poor results. Atropine sulphate hypodermically helps by drying up the mucus in the throat and bronchi. Repeated aspirations from the throat with the aid of a suction apparatus give wonderful relief. Gavage cannot be used in these cases, since postural drainage is of great importance. The two cannot be combined, because the fluid runs out of the stomach into the pharyngeal space and almost suffocates the patient. Intravenous dextrose can be given only with difficulty, because the patient's arm has to be removed from the respirator for this procedure. Patients usually die within twelve hours after the appearance of the bulbar symptoms. There were four cases belonging to this group.

**Group 2** When patients belonging to group 2 are placed in the respirator, they show respiratory paralysis only. These patients, like those in group 1, improve instantly. Sometime later, usually on the second or third day, while the patients are still in the machine, the signs and symptoms of bulbar and cranial nerve palsy begin to appear. The commonest of the cranial nerves involved is the facial. The paralysis may not be noted for several days because the patients usually lie quiet and talk little. The easiest way to elicit evidence of facial palsy while the patients are in the machine is to ask them to show their teeth or to close their eyes. Most of these patients are very young children and for the first few days do not cooperate well. Nothing can therefore be done until they are sufficiently improved to remain out of the respirator long enough to permit examination. Some of these patients may show only a nasal twang or may be unable to pronounce the consonant *b*. Others may develop hoarseness or squeaky voices, or all these signs may be found in one patient. The patients, though they have bulbar symptoms, have no difficulty in swallowing and do well. They adapt themselves quickly to respirator life and improve slowly. I have seen only one case of this character.

<sup>2</sup> A new type of respirator is now available in which the respiratory rate may be adjusted to any number.

#### IMPROPER INDICATIONS FOR REMOVING PATIENTS FROM THE RESPIRATOR

At no time did we encounter any difficulty in deciding whether a patient required the respirator. The signs and symptoms calling for artificial respiration as described were very simple. The difficulty began when a decision had to be made as to whether a given patient should be removed from the respirator. In 1930, Shambaugh, Harrison and Farrell<sup>3</sup> used the spirometer to determine the vital capacity of their 21 year old patient as a basis for removing him from the respirator, and, when his vital capacity had reached 1,950 cc and his breathing, while at rest, showed no effort, the patient was discharged. This is the accepted method of determining the ability of a patient to inhale a chestful of air, which ability normally depends on the tonus of the diaphragm and the intercostal and abdominal muscles. We therefore decided to adopt the determination of the vital capacity as a basis for removing patients from the respirator. While this method is practical with adults, it cannot be used in children, in whom cooperation is not so easily obtained. Children, at sight of the spirometer cry and, when asked to inhale a chestful of air and force it into the mouthpiece of the apparatus, close their mouths and refuse to cooperate. Wilson<sup>4</sup> had similar experiences in small children. We were therefore left in the dark as to the indications for removing patients from the respirator and we were compelled to adopt the following procedure:

If a child having been in the respirator a reasonable time could stay out for eight hours without apparent respiratory discomfort, he was removed from the machine and watched for several days. If the child did not become cyanotic or perspire excessively, slept through the night, breathed without effort and was otherwise apparently comfortable, he was sent to a convalescent ward, where he remained for several weeks before being transferred to an orthopedic institution.

#### SUBSEQUENT HISTORY OF THESE CASES

Practically all surviving respirator cases were discharged either to orthopedic institutions or to convalescent homes.

**CASE 1**—A girl, aged 4 years, well developed and well nourished, who had been in the respirator for twenty eight days, was the first patient discharged. She remained under observation for several days and was then sent to a convalescent ward, where she stayed for two weeks. During this time she did not show any respiratory embarrassment, took nourishment well and was cheerful and cooperative. At the end of the two weeks she was discharged with a complete quadriplegia to an orthopedic hospital. Three weeks later, or six weeks after she was removed from the machine, she was returned to the hospital for immediate respirator attention. Examination at this time did not reveal any additional neurologic changes. There was no evidence of cranial nerve palsy. The child swallowed well, the voice was clear and there were no signs of muscular atrophy. The chest and abdomen were moving freely with inspiration and expiration. The face was somewhat dusky. The respiratory rate was 35, pulse 160 and the temperature 100 F. Examination of the chest revealed no evidence of dullness but there were coarse mucous rales in the entire chest in front and behind. Inability of the patient to cough was the outstanding symptom. She was constantly attempting to clear the trachea but was unable to do so. A lumbar tap revealed clear fluid under normal pressure without any cells. Therapeutically, everything possible was done: atropine sulphate

hypodermically, oxygen inhalation, and finally the respirator as a last gesture to save her life, but without avail. She died in the respirator two days after readmission to the hospital.

**CASE 2**—A girl, aged 7 years, who was in the respirator thirty-five days, was watched for several days and then sent to the convalescent ward for two weeks, from which she was transferred to an orthopedic hospital. Four weeks later, or seven weeks after she was removed from the respirator, she was returned to the hospital for replacement in the machine. On admission the signs and symptoms were exactly the same as those present in case 1. The one striking symptom was her inability to cough and to clear the trachea. Every therapeutic resource was tried without success, and the child died in the respirator fifty-two hours after readmission to the hospital.

Data received from various orthopedic hospitals and convalescent homes revealed that one third of the respirator patients discharged died and that the cause of death on the hospital records was given as bronchopneumonia secondary to poliomyelitis.

The clinical picture and the physical conditions presented by these two cases did not suggest bronchopneumonia alone. Two things were definite: the bronchi and the trachea were full of mucus, and the patients were unable to cough. These are not signs of bronchopneumonia. The cause of death, as it appeared to us, was suffocation, but we lacked pathologic proof. We therefore decided to wait for an opportunity in which the lungs might be studied in conjunction with the pathologic changes in the spinal cord, for a possible explanation of the immediate cause of death.

**CASE 3**—A girl, aged 9 years, was admitted with a diagnosis of preparalytic poliomyelitis. Two days after admission, both lower extremities became paralyzed. On the third day she developed respiratory muscle paralysis and was placed in the respirator, in which she remained for twenty-one days. Following a three week period of observation, she was transferred to an orthopedic institution. One and one-half years after her first admission to our hospital she was returned to us for respirator treatment. From the history it was evident that the child developed an infection of the upper respiratory tract, the chief symptoms of which were a slightly congested throat with excessive bronchial secretions. There was no rise in temperature nor was there an elevation in the pulse rate. On the third day of her present illness she suddenly became cyanotic and dyspneic. She responded to oxygen inhalation and atropine sulphate hypodermically. She was apparently doing well for the next two days. Suddenly she once more became cyanotic and dyspneic. At this stage of her illness she was transferred to us. On admission she was somewhat anemic but alert and responsive. Her chief complaint was inability to cough up mucus which she stated was choking her. She was constantly attempting to clear the trachea but without success. Her throat was slightly congested, and the tongue was somewhat coated. The chest was resonant to percussion, and auscultation revealed coarse mucous rales in front and behind. The temperature was 100 F, the pulse was 110, regular as to rate and rhythm, and the respiratory rate was 24. The abdomen was soft and the liver and spleen were not palpable. Neurologically, she showed a complete flaccid quadriplegia with very little atrophy, the abdominal reflexes were present but sluggish, the lower intercostals and the diaphragm were apparently moving freely. It was evident from the moment the patient was admitted to the hospital that unless we removed the mucus from the trachea and the bronchi and gave the child complete chest expansion she might either drown in her own secretions or develop atelectasis. Two methods of procedure lay open before us. One was bronchoscopy with suction which we considered too drastic, the other was hypodermic treatment with atropine sulphate which we adopted along with the Drinker respirator for chest expansion. This method of treatment apparently was very effective for a short time; we soon observed that the child's breathing was out of rhythm with the respirator; her face gradually became dusky and her lips cyanotic, the temperature

<sup>3</sup> Shambaugh, G. E., Harrison W. G. and Farrell J. I. Treatment of Respiratory Paralysis of Poliomyelitis in a Respiratory Chamber. Report of Three Cases with One Recovery. *J. A. M. A.* 94: 1371 (May 3) 1930.

<sup>4</sup> Wilson J. L. Respiratory Failure in Poliomyelitis. Treatment with the Drinker Respirator. *Am. J. Dis. Child.* 43: 1433 (June) 1932.

remained at 100 F. Repeated physical and radiographic examinations of the chest did not show any signs of pneumonia. The child died in the respirator forty-eight hours after readmission to the hospital.

Permission was granted to examine at postmortem only the heart and lungs. The heart was free from pathologic changes. Both lungs were free, and detachment was easily effected. They were greatly retracted from both the diaphragmatic and the parietal pleural surfaces. In size, they corresponded to those of an infant and measured 13.5 cm. from apex to base. They were dark gray and were studded with numerous subpleural petechiae, the left upper lobe was deep purple and was firm to the touch. Dissection carried into the bronchial tree of this lobe revealed the complete occlusion of the hyparterial bronchus with a yellow plastic mucopurulent plug. Similar occlusions were noted in the bronchiolar ramifications, including the finer bronchioles of this lobe.

Microscopic examination of a section (fig 1) from the left upper lobe of the lung revealed desquamation of the ciliated epithelial cells lining the bronchioles and bronchi, which were lying free in the mucopurulent plastic exudate along with polymorphonuclear leukocytes. The basement membrane on which the epithelial cells rested was swollen. The underlying vessels were congested and the surrounding tissue was infiltrated with inflammatory cells. The cells of the mucous glands were swollen and granular. Throughout the lung the alveolar walls were relaxed and approximated, some showed evidence of catarrhal inflammation which was most marked peribronchially. The blood vessels in the alveolar walls were dilated.

#### PATHOLOGIC CHANGES IN THE SPINAL CORD OF POLIOMYELITIS

The clinical course of poliomyelitis may be correlated with three types of lesions in the anterior horn cells of the spinal cord: (1) an area of edema with perivascular round cell infiltration; (2) the presence of petechial hemorrhages in addition to edema and perivascular round cell infiltration; and (3) complete destruction of the anterior horn cells, along with petechial hemorrhages, edema and perivascular round cell infiltration. While it is convenient thus to describe definite areas of pathologic change in the anterior horn cells, these in fact not only merge gradually into one another but often coexist in different parts of the spinal cord. Applying these pathologic observations to the anterior horn cells of the lower motor neurons comprising the phrenic, intercostal and abdominal nerves, one can perceive that if the pathologic condition is of the edematous type the muscles innervated by these nerves will recover their function as soon as the edema subsides, performing all the physiologic processes assigned to them by nature, including coughing. A patient, therefore, suffering from respiratory muscle paralysis with an edematous type of pathologic spinal cord changes, when placed in the respirator recovers rapidly and completely, usually in the course of two or three weeks, and when removed is able to breathe and cough without difficulty.

When the pathologic changes of the anterior horn cells consist of petechial hemorrhages in addition to edema, recovery of the respiratory muscles is markedly delayed. The edematous anterior horn cells are the first to recover, and the hemorrhagic last. As soon as the edema is absorbed, impulses begin to pass down the axis cylinders to the muscle bundles. If part of the neurons that constitute the phrenic, intercostal and abdominal nerves recover, part of the diaphragm and of the intercostal and abdominal muscles regain their function. Patients suffering from partial paralysis of the respiratory muscles can and do breathe freely and without effort when out of the respirator. However, when

patients with partial respiratory muscle paralysis attempt to cough, which requires the entire function of the diaphragm and the intercostal and abdominal muscles, they are unable to do so. The average time that a patient with this type of pathologic spinal cord may have to remain in the respirator is about two months, and he may probably be able to cough by the end of six months.

Cases in which both petechiae and edema were found present in the spinal cord, showed microscopically most of the anterior horn cells intact and their nuclear staining capacity retained. Some showed the disappearance of the Nissl spindles, and loss of straining capacity in the nuclei with margination and extrusion. The gray matter was infiltrated with leukocytes and lymphocytes. Slight degenerative changes were found in the white matter, but the most obvious changes are perivascular infiltration with petechiae.

Lastly, when the pathologic changes of the anterior horn cells consist of cell destruction, hemorrhage and

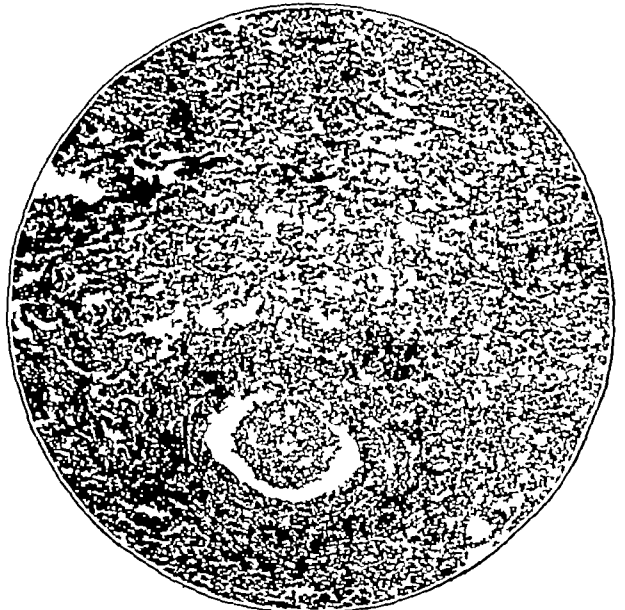


Fig 1 (case 3)—Microscopic appearance of lung

edema, recovery of respiratory muscle function may take months or years or may not occur at all, and the patient may have to spend the rest of his life in the respirator.

In health, the lungs are kept constantly expanded and their airways open. Through these tubes, they are the best drained organs in the body. The force that keeps them open is the tonus of the diaphragm and the other muscles of the thorax. When ever this tonus is lowered, as it is in the respiratory muscle paralysis of poliomyelitis, the vital capacity of the lungs is gradually diminished. In the unaerated areas, mucus accumulates until some of the airways are filled and closed. If there happens to be present also inhaled foreign material or mucus from catarrhal inflammation, these conditions also contribute to the blocking of airways. As soon as any part of a lung is thus shut off the air within it is absorbed into the blood. The occluded lung or lobe or lobules are soon collapsed, and in such collapsed areas any bacteria that happen to be present find conditions favorable for their growth and activity. This conception of the part that atelectasis plays in the development of pneumonia, first clearly stated by Coryllos and Burn-

baum<sup>5</sup> is now established. It is essentially in this way that all secondary pneumonias develop.

This conception assigns to the tonus of the skeletal muscles of the body a place of prime importance in respiration. It is this tonus that keeps the lungs expanded and prevents atelectasis. The movements of respiration do not consist merely in the alternate contraction and relaxation of the thoracic muscles. In reality, these muscles pass at each breath from one tonus level to another and back again.<sup>6</sup> When the tonus of the entire musculature of the body is depressed, respiration is depressed also. The capacity of the thorax is greatly decreased by the relaxed and elevated diaphragm and by the flaccidity of the other respiratory muscles. In the partially deflated lungs, atelectasis readily develops, and if infection is present pneumonia results. The common sequence is lowered muscular tonus, decreased vital capacity, occlusion, atelectasis, pneumonia.

Nature apparently foresaw the possibility of bronchiolar occlusion by means of foreign bodies or mucus plugs and bestowed on the human body a mechanism

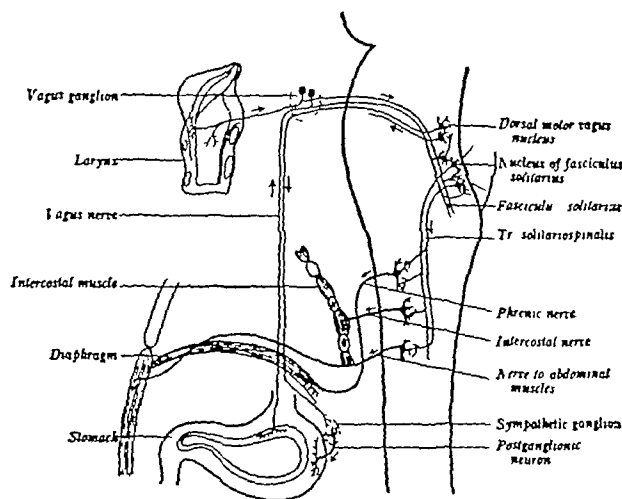


Fig 2—Mechanism of the cough reflex. From the irritated respiratory mucous membrane as for example of the larynx trachea or bronchi the disturbance is propagated along the afferent fibers of the vagus through the nucleus of the tractus solitarius and the descending fibers arising in it to the spinal primary motor neurons that innervate the diaphragm and the intercostal and abdominal muscles. (Herrick, Cajal.)

by means of which it might purge itself of these. This mechanism is the cough reflex. When the integrity of the reflex arc is broken by destruction of the anterior horn cells, coughing is impossible. Mucus slowly accumulates in the bronchioles and sets up numerous atelectatic areas. Finally, the mucus fills up the entire bronchial tree and suffocates the patient. This primarily was the cause of death in the three cases described (fig 2).

#### INDICATIONS FOR REMOVING PATIENTS FROM THE RESPIRATOR

Patients having been placed in the respirator remain in it undisturbed except for rotation from side to side several times daily. Whatever attention and nursing care they require are given to them through the port-holes. On the next and subsequent mornings while

getting their morning care, they are observed for ability to use their respiratory muscles. As soon as they are able to do so, they are gradually weaned from the respirator in the following manner: they are removed for one hour the first day, two hours the second day, and three hours the third day, until on the eighth day they are able to stay out of the respirator for eight hours or more without apparent discomfort. These patients are then asked to cough. If they can cough they are removed from the respirator and watched carefully for cyanosis, excessive perspiration and somnolence, and in the absence of these signs they are sent to the convalescent wards. However, when they are able to breathe without effort but cannot cough, they remain in the respirator sixteen out of every twenty-four hours until such time as they are able to cough.

Improvement in muscle tonus and vital capacity is determined regularly by asking the patient to count, starting with one, two, three, until the expiratory phase of the respiratory cycle ends and the inspiratory phase begins, without using the accessory muscles of respiration. The last number counted is then noted and, as the vital capacity increases and the muscle tonus improves, the patients are able to count more numbers during the expiratory phase. By means of this simple procedure one observes that the vital capacity reaches its maximum long before the patients are able to cough.

#### SUMMARY AND CONCLUSIONS

1 Any case of poliomyelitis with or without a rise in temperature may develop respiratory muscle paralysis within twenty-four hours.

2 The most important indication for placing a patient in the respirator is a diminished vital capacity, which can easily be determined by the counting test, and as soon as this indication becomes apparent there is nothing to be gained by waiting for a fully established picture of respiratory muscle paralysis.

3 Ten centimeters of negative water pressure in the respirator is sufficient to start with in cases of children under 10 years of age, and the respiratory rate of the machine should correspond to the normal respiratory rate of the patient.

4 The effect of the respirator in cases of respiratory muscle paralysis is an immediate and miraculous improvement, but prognosis should be withheld for at least five days in spite of the apparent improvement.

5 The ability to breathe freely and without effort is not an indication for removing a patient from the respirator. The only indication is the ability to cough.

6 Patients removed from the respirator without being able to cough may later develop atelectasis with bronchopneumonia.

**Experimental Nephritis Produced by Radium.**—Chronic and renal insufficiency without hypertension has been consistently produced in dogs by intravenous injection of the active deposit of radium emanation. The length of life varied inversely with the dosage of radium. The kidneys were the only organs showing pathologic or functional change. This apparent selective action is probably due to the excretion of the active deposit of radium by the kidneys resulting in a greater concentration of radioactivity in these organs. The kidneys were uniformly small and contracted, showing glomerular tubular, interstitial and vascular changes comparable in some respects to what occurs in man in chronic hypertensive nephritis. No hypertension was produced, however. The earliest detectable change occurred thirty days after the initial dose. —Adams, Egloff and O'Hare. *Experimental Chronic Nephritis Produced by Radium*, *Arch. Path.* 15:465 (April) 1933.

5 Coryllos, P. N. and Burnbaum, G. L. Lobar Pneumonia Considered as Pneumococcal Lobar Atelectasis of the Lung. *Bronchoscopic Investigation*, *Arch. Surg.* 18:190 (Jan.) 1929.

6 Henderson, J. and J. S. Reasons for the Use of Carbon Dioxide with Oxygen in the Treatment of Pneumonia. *New England J. Med.* 206:151 (Jan. 28), 1931.

# THE SPECIFIC EFFECT OF "FOUADIN" (FUADIN) ON GRANULOMA INGUINALE

## PRELIMINARY REPORT

THOMAS V WILLIAMSON, MD

WITH THE COOPERATION OF

JAMES W ANDERSON MD

RAYMOND KIMBROUGH, MD

NORFOLK, VA

AND

AUSTIN I DODSON MD

RICHMOND VA

In 1931, one of us (T V W) reported a case of bilharziasis<sup>1</sup> in which attention was called to the fact that a new trivalent compound of antimony and sodium, called "Fouadin," was replacing antimony and potassium tartrate in Egypt as a safer, more easily administered, and more quickly acting specific in this fluke infestation. Fouadin is named in honor of King Fouad of Egypt by reason of his enthusiastic support during its developmental stage.

There is very little news value to Americans in a story of the use of Fouadin in the infestation known as bilharziasis, or schistosomiasis, because that condition is so rare in this country. This is not true in Egypt, however, as no less than 400,000 cases of this grave, mutilating and distressing parasitic invasion were treated in the anthelmintic hospitals of the Egyptian government during the year 1928 alone. It is so well known that the intravenous administration of large doses of antimony and potassium tartrate is often accompanied by disconcerting systemic reactions, besides being difficult to administer, that one instantly appreciates the fact that the advent of a drug which obviates most of these difficulties is an event of supreme importance in the country of the Nile.

The coming of Fouadin in all probability may prove to be of great importance not only in Egypt but throughout the world, by reason of its specific effect on granuloma inguinale. Granuloma inguinale is by no means rare in the United States—indeed it is endemic here—while it is quite common in the tropics.

There are no easily available figures that show definitely the rate of occurrence of this disease anywhere. Howard Fox<sup>2</sup> says that it is much more prevalent in the United States than is generally supposed. He quotes Gage<sup>3</sup> as saying that the reported cases do not give a fair idea of its incidence in our country. We concur heartily in this statement. Johns and Gage<sup>4</sup> state that "a rough estimate of the total number of cases under treatment in the various hospitals and clinics in New Orleans would run into the hundreds." In Norfolk, our attention is being called frequently to new cases. In Dutch New Guinea, from 12 to 35 per cent of the population has been found to be infected<sup>5</sup>. The disease is also attracting much atten-

tion in many parts of the Orient. These statistics are sketchy and unsatisfactory, but they demonstrate conclusively that granuloma inguinale is not rare. Although it may not be alarmingly prevalent, it is grossly incapacitating when it does strike.

It must be recalled that up to the present day antimony and potassium tartrate has proved to be more universally beneficial in the treatment of granuloma inguinale than all other forms of medication. Andrews<sup>6</sup> says of it "This form of treatment is thought by some to be specific, but in other hands it has proved disappointing."

While we do not mean to state that antimony and potassium tartrate is specific yet we venture to assert that it has not always been given the fullest opportunity to prove its specificity in this tropical ulceration. The reasons for this are obvious. At times, as much as 175 grains (11 Gm) of antimony and potassium tartrate must be administered to get maximum improvement. Ten cubic centimeters of a 1 per cent solution is injected intravenously at each sitting. There are approximately 2 grains (0.13 Gm) of the drug in each 10 cc of the 1 per cent solution. Thus in the neighborhood of eighty injections may be called for in an individual case. Bearing in mind the frequent unpleasant systemic reactions from intravenous antimony and potassium tartrate, and, basing our reasoning on the supposition that from fifty to eighty-five injections may be required, we ask ourselves: What, if the patient is permitted the choice in the matter, is the real likelihood that the drug has always had a fair trial to prove its ultimate potency? One should not lose track of the mental status of most of the patients who ordinarily need treatment for this curse. Treatment must be given twice each week in a continuous series, or, according to Manson the pathologic condition begins to spread again. An uninterrupted treatment period of from twenty-five to forty-two weeks is thus necessitated. Certainly, a less drastic and a shorter method of treatment would be acceptable.

Before Fouadin was introduced, antimony and potassium tartrate, therefore, was the most brilliant suppressor of both granuloma inguinale and bilharziasis.

The preliminary report of the experiment with Fouadin in bilharziasis by Professor Khalil, parasitologist of the University of Cairo, was to the effect that this new antimony compound could be injected into the muscles without deleterious local results, that depressing systemic reactions were negligible, and that the time required to obtain a cure was almost cut in half. A rough calculation reveals that this time saving is an immense advantage to the Egyptian government as it lops off some six million treatment days yearly. This estimate is based on the 400,000 cases treated in 1928. Antimony and potassium tartrate cures the disease in an average of forty days, Fouadin will produce the same results in twenty-eight days. Thus the many striking advantages of Fouadin over intravenous, more highly toxic antimony and potassium tartrate are apparent.

In the report of the cases of bilharziasis in 1931, the second case treated and reported by the author<sup>7</sup> of that article, it was suggested that Fouadin might be as much superior in the treatment of granuloma inguinale as it seemed to be in that of bilharziasis. Certainly, a drug that could be injected into the muscles

Read before Norfolk County Medical Society Oct 17, 1932.  
The name accepted by the Council on Pharmacy and Chemistry is spelled Fouadin.

<sup>1</sup> Williamson T V. The Report of Two Cases of Bilharziasis or Schistosomiasis. Virginia M Monthly 38:449 (Oct) 1931.

<sup>2</sup> Fox Howard. Granuloma Inguinale. Its Occurrence in the United States. J A M A 87:1785 (Nov 27) 1926.

<sup>3</sup> Gage, J M. Granuloma Inguinale. Arch Dermat & Syph 7:303 (March) 1923.

<sup>4</sup> Johns F M and Gage J M. Some Observations on Granuloma Inguinale and Cultural Studies of the Donovan Bodies. Internat. Clin 4:15 (Dec) 1924.

<sup>5</sup> de Vogel W. The Struggle Against Venereal Granuloma Among the Marindinos in Dutch New Guinea. Bull de l'Office internat d'hyg pub 10:1137 (Aug) 1927.

<sup>6</sup> Andrews G C. Diseases of the Skin. Philadelphia W B Saunders Company 1930 p. 1038.  
<sup>7</sup> Williamson T V and Townsend, M E. Vesicle Bilharziasis. J Urol 12:175 (Aug) 1924. Williamson<sup>1</sup>.

would be better than one that had to be introduced into the veins

Shortly after the report had been published, the Winthrop Chemical Company of New York communicated with the author and informed him that the firm was the American representative of the continental makers of Fouadin. The Winthrop people expressed great interest in the suggestion of experimental work on granuloma inguinale with Fouadin and offered to import a sufficient quantity without cost for that purpose. This was done and the experiment was begun in Norfolk, early in 1932.

The originator of the experiment (T V W) whose work is confined exclusively to urogenitology, soon realized that the assistance of trained dermatologists was essential in order to obtain the most finished results. From that time on Drs Anderson and Kimbrough have been actively identified with the work. On observing the rapid and brilliant curative influence of Fouadin in the first few cases, the author became quickly convinced that a boon for granulomatous humanity had been stumbled on, and that the kindly thing to do was to secure data on enough cases to warrant an early broadcast of the method of medication. Thus, Dr Dodson happily was enlisted in the venture.

#### DESCRIPTION OF FOUADIN

The following excerpts are taken from the report of Prof M Khalil<sup>8</sup>

Since 1924, the Bilharzia Research Section of the Public Health Department of Egypt with the cooperation of the research department of the Beyer firm has endeavored to

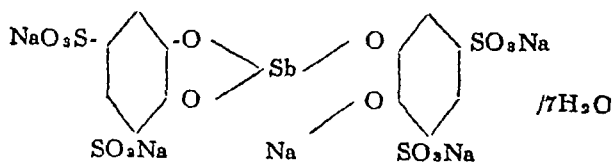


Fig 1—Structural formula of Fouadin

replace antimony and potassium tartrate with less toxic preparations such as Sb 211 and Sb 212 and Prof H Schmidt of Elberfeld has produced many preparations which were tested or modified in some cases according to experience in Egypt. Among these compounds were Stibosan 693 b now Neo Stibosan, Antimosan, Antimosan new, Antimosan new II, and Sdt. 91, which has been named in Egypt 'Fouadin'.

The formula of Fouadin (antimony-III-pyrocatechin sodium disulphonate), according to Professor Schmidt, is given in figure 1.

This preparation is used in a 7 per cent solution, in which condition it is stable and has been used after a lapse of six months in the Egyptian summer without deterioration. It is a trivalent antimony compound and is far more effective for bilharzia than the pentavalent compound of antimony. The latter is more effective in the treatment of kala-azar.

**Dosage**—After a series of animal experiments to determine the minimum lethal dose and its effects on the tissues at the site of the intramuscular injections it was used in man in increasing doses, the patient being kept under strict observation. As a result of treating 150 cases, the course of treatment shown in table 1 was adopted for adults.

The dose is determined for children according to their weight and not their age. Sixty kilograms of body weight is taken as the average adult weight in the scheme as shown in table 1.

The injections are given intramuscularly, preferably in the gluteal region in the two sides alternately. The drug is very easily absorbed, as shown by roentgenograms of the site of

injection, the shadow produced by the solution disappearing in nine minutes.

**Observations During the Course of Treatment**—No immediate effects are shown, contrary to what occurred sometimes in the case of antimony and potassium tartrate in which coughing, vomiting and fainting are noticed in a certain number of cases. During the later injections, vomiting has been recorded in a few cases, especially in patients who continued to do their ordinary work after the injections. Slowing of the pulse 10 beats per minute, occurs in a fairly large percentage

TABLE 1—Course of Treatment Adopted for Adults

Day	Dose	Fouadin 7 per Cent Solution Cc
First	First	15
Second	Second	3.5
Third	Third	5.0
Fifth	Fourth	5.0
Seventh	Fifth	5.0
Ninth	Sixth	5.0
Eleventh	Seventh	5.0
Thirteenth	Eighth	5.0
Fifteenth	Ninth	5.0
Total		40.0

of cases. Dr M Hammouda of the department of physiology, Faculty of Medicine, Cairo, and Dr Weese of Elberfeld injected the drug in very large doses into animals used for experimental work and noticed that the drug is quite safe and does not affect the vagus.

The antimony is mainly excreted by the kidneys and to a very small extent by the intestinal tract and none by the skin. The daily excretion of antimony during the whole course was determined by Dr Ali Hassan of the public health department of the Egyptian government, biochemical research department.

A comparison of Fouadin with antimony and potassium tartrate is made in table 2. In view of the facts brought out it is evident that Fouadin is preferable to antimony and potassium tartrate.

#### REPORT OF CASES OF GRANULOMA INGUINALE TREATED WITH FOUADIN

**CASE 1—History**—A Negress, aged 25 who had had a genital ulceration dating back to 1925, complained of vaginal ulceration which gave off a profuse, foul, constant discharge, and of painful incontinence of urine. The onset of the trouble was characterized by a small itching ulcer on the vulva. This

TABLE 2—Comparison of Fouadin with Antimony and Potassium Tartrate

	Antimony and Potassium Tartrate	Fouadin
Administration	Intravenous	Intramuscular
Local reaction	Inflammation, abscess or sloughing may occur	Slight or no pain
Immediate general reaction	Coughing, vomiting and fainting frequent	None
Late effect	Fever, continuous vomiting, jaundice and sudden death	In the present series vomiting only in 2.5 per cent of cases
Length of course	Four weeks	Two weeks
Expense	Very cheap	Comparatively dear
Maximum dose	2 cc maximum (44 mg Sb)	5 cc maximum (40.5 mg Sb)

spread slowly and later caused such fibrous tumefaction of the labia that a vulvectomy was done for relief. Still later the urinary function became involved to such an extent that the patient had had no control for several years. There was also a constant pain in and around the bladder outlet. The patient had had a lengthy course of treatment with neoarsphenamine and antimony and potassium tartrate before coming to us but no form of treatment had ever had a great effect on the ulceration.

<sup>8</sup> Khalil, M. Nazmi, M. Peter, F. M. Salah el Din, M. and el Belash, M. H. The Treatment of Schistosomiasis with Intramuscular Injection of Fouadin. Deutsche med. Wochenschr. 55: 1125 (July) 1929.

**Examination**—The patient was emaciated. She had a hunted, tearful expression. This was noticed in the majority of the patients treated in this series. The Wassermann reaction was negative. There were irregular areas of granulomatous ulceration in the vagina extending as far up as the cervix and encircling the urethral outlet. Profuse, fetid discharges soaked the vulval pads, and there was the odor of uncontrolled urine.

**Treatment and Result**—After the third injection of Fouadin the patient complained much less of bladder pain. Following the fifth treatment, she was able to walk 1 mile to the office and maintain control of the urine. At the end of the first course of treatment, given according to the schedule of dosage of Professor Khalil which has been previously outlined, all ulceration had disappeared, the pain was gone and there was fair control of urine. The appetite was good, sleep was normal for the first time in years, and the patient was gaining rapidly in weight.

The granuloma was cured.

Figure 2 shows the cured condition. No picture was taken at the beginning of treatment because it was not thought that a good plate could be obtained. This error was not made in any of the subsequent cases; the lesions were found to photograph well. It may be noticed easily that the vaginal mucous membrane is

lacking in pigment. This cicatricial bleaching is found in most of the lesions that have been healed with Fouadin. This healing was very rapid in every case. The associated dermatologists (J. W. A. and R. K.) are inclined to believe that this bleaching, or, what is more correct, this lack of pigment, owing to the rapidity of the healing, may be permanent.



Fig 2 (case 1)—Condition after treatment with Fouadin.

**CASE 2—History**—A Negress aged 25, reported to us with a large perianal granuloma which had been in existence for four years. Treatment with neoarsphenamine and antimony and potassium tartrate had been given with very little result. The patient complained most of a foul smelling discharge of great amount, and of terrific nocturnal pain. This type of nocturnal pain was a symptom of many of the other cases in the series. Andrews<sup>9</sup> states that granuloma inguinale is painless. We do not agree with him. Some of our patients complained bitterly of pain which, for the most part, simulated that of syphilis, in that it was most marked at night. This pain is very resistant to anodynal authority, even morphine having but partial effect on it. Nor does the phenomenon of mixed infection in the ulceration explain the symptom as satisfactorily as might be desired, there is probably some disturbance in the nerve supply involved. We found that a combination of 3 grains (0.2 Gm.) of sodium amytal with a grain each (0.065 Gm.) of codeine sulphate and extract of hyoscyamus was the most effective pain killer of the non-narcotic type of drugs. The Wassermann reaction was negative. We do not feel that the Wassermann test is of great importance in the diagnosis of granuloma inguinale, as a positive response does not rule out the disease in favor of syphilis. However we do feel that it is of great value in the subsequent check up of the patient when the granulomatous ulceration is cleared up. The question of whether the patient may have both syphilis and granuloma at one time is of considerable moment and interest.

This patient also complained of loss of appetite. This was a fairly constant observation in our cases. Loss of weight is not a constant finding, as we have seen obese persons with granuloma.

**Examination**—There was an enormous infected papillomatous growth extending entirely round the anus. The circumference of this neoplastic mass was irregularly oval, its radius from the anal center being 3 inches. It was elevated above the skin level throughout. Figure 3A depicts it clearly.

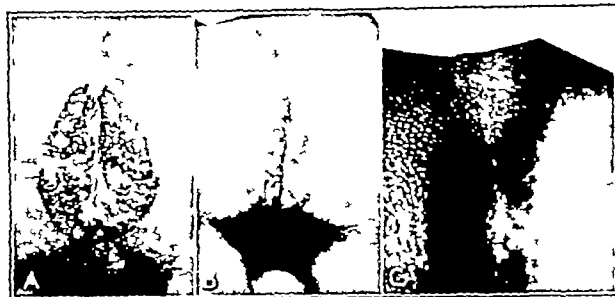


Fig 3 (case 2)—Condition A before treatment, B after ten days of routine treatment, C after ten treatments in twenty-six days.

**Treatment and Result**—Routine treatment every two days with Fouadin brought about the improvement shown in figure 3B in ten days. The discharge ceased after the third injection, the mass assumed a dead look and began to dry up. Following the fourth treatment there was no more pain. There was no trace of the ulcerated growth at the conclusion of the first course of Fouadin. The patient was cured in twenty-six days with ten treatments. Figure 3C shows the astonishingly perfect results.

**CASE 3—History**—An emaciated Negress, aged 23, had an extensive ulceration of the left groin vulva, vagina and perineum. This condition had started twenty-two months before as a pimple in the groin and spread slowly to its present dimensions. The symptoms she stressed were pain which was worse at night, large quantities of ropy, fetid discharge, and loss of appetite. From the scanty information obtained by questioning her, it seemed that she had had treatment with both antimony and potassium tartrate and arsphenamine.

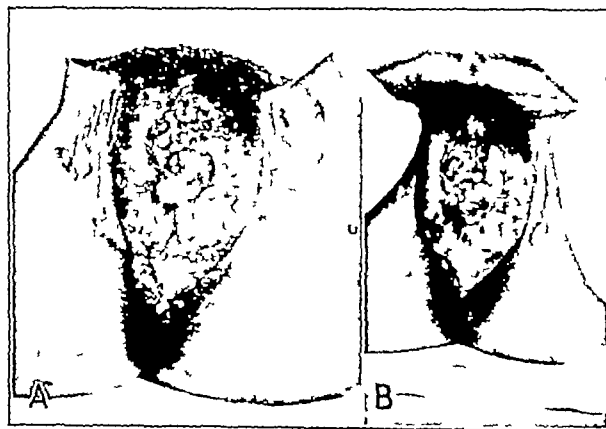


Fig 4 (case 3)—Condition A before treatment showing tabs resulting from the undermining of the labia and also the streams of secretion. B when healed.

**Examination**—There was a dirty ulcer in the left groin 3 inches (7.6 cm.) in length and 2 inches (5 cm.) in width. The labia, vagina and perineum presented generalized granular ulceration. The labia were so enlarged and thickened that they seemed to be the seat of elephantiasis. As the result of degenerative undermining of the labia there were several large tabs which gave the impression of pedunculated tumors. Figure 4A shows these tabs well. It also registers the streams of fetid secretion running from the lesions.

**Treatment and Result**—The response to treatment was very rapid. Dry crusts formed over the lesions in ten days. The removal of these crusts revealed healthy tissue beneath which possessed the hilly aspect of granulation tissue but which was covered with a definite integument. There was no black pigment in this healed area, nor has any appeared to date. There



Fig 5 (case 4) —Before treatment.

seemed to be a total lack of the formation of fibrous tissue, which seems to be a frequent sequela in the slow healing of granuloma inguinale with other forms of treatment. No tendency to fibrous contraction was observed in the rehabilitated tract.

Figure 4B tells the story of the healing. The bleached area in the left groin may be noted. The hypertrophied vulval tabs



Fig 6 (case 4) —Healing effected by treatment

remain, although they are somewhat shrunken they will be removed with the knife later.

The patient was cured in thirty days with twelve injections of Fouadin.

**Special Note**—This patient, together with patients 4 and 5, complained of a reaction of which no mention was made by

Professor Khalil. Beginning some ten hours after certain of the injections, there was generalized, subacute joint pain, which would persist for about fifteen hours and then subside slowly. This pain, while it was moderately severe, was never bad enough to warrant the discontinuance of treatment. When it annoyed the patient, a three day interval was allowed between the injections instead of the routine forty-eight hours.

**CASE 4—History**—A Negro, aged 22, had a groin and penile ulceration which had been in evidence for several years. It began as a small hard spot in the left groin and gradually spread until the greater part of the groin, penis and scrotum became involved. He was treated with antimony and potassium tartrate and with arsphenamine. The antimony and potassium tartrate healed most of the ulceration, but there always remained isolated areas that would not respond entirely. As soon as the administration of the drug was discontinued, a slow recrudescence set in. For the past six weeks the ulcerated region had been very painful.

**Examination**—The left groin, the left side of the scrotum and the penis in the region of the foreskin presented a number of small ulcerated areas of varying size and shape. The ulceration was shallow, was covered with dirty granules, and gave off a profuse discharge of rank odor. There was much thick fibrous tissue in the left groin which had contracted to a marked degree. The prepuce was also much enlarged by fibrous tissue. This preputial tumefaction was not lessened by treat-

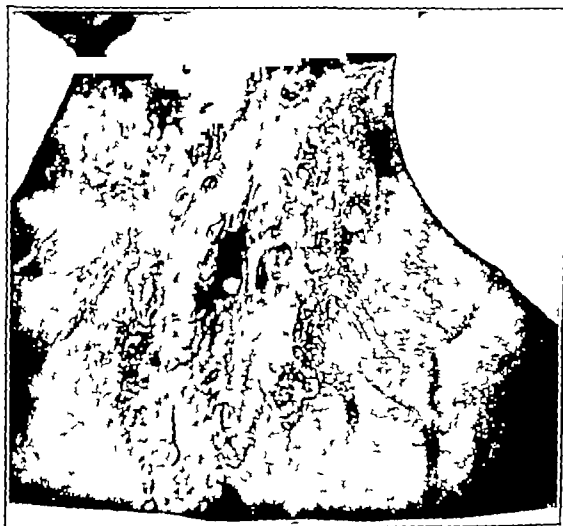


Fig 7 (case 5) —Ulceration before treatment with streams of discharge

ment with Fouadin but will be removed by cosmetic surgery later. The whole condition is depicted in figure 5.

**Treatment and Result**—Twelve injections of Fouadin over a period of thirty days brought about the total healing portrayed in figure 6. As the patient complained more of the joint pain reactions than any of the others, the course of injections was spread out over a longer period than usual in order to permit the disappearance of all such symptoms between injections. A total cure resulted.

**CASE 5—History**—A married Negress, aged 24, the mother of three small children, had been afflicted with a foul smelling, painful, extensive ulceration in the groins and perineum which had persisted for several years. The Wassermann reaction was negative. She told of having had two kinds of intravenous injections, at several times during the history of the disease, which we inferred to have been antimony and potassium tartrate and arsphenamine. Either the treatment was ineffective, or the patient was an inconsistent and irregular one. There was profuse discharge (shown well in figure 7), nocturnal pain, emaciation and loss of appetite.

**Examination**—An enormous ulceration involved both groins, the vulva and the perineum. It had invaded the vagina and it extended backward beyond the anus. The entire area was

badly infected, and there were several large blebs filled tightly with glairish sticky fluid. The whole pathologic condition was most repulsive. Figure 7 is more expressive than words.

**Treatment and Result**—A course of twelve injections of Fouadin over a period of thirty days produced the results pictured in figure 8. The lack of pigmentation may be clearly seen. There was no fibrous formation. The healed surface is smooth. Absolute cure resulted.

**CASE 6—History**—A young Negress of undetermined age presented herself with the following history. The time of onset was somewhat uncertain, but the condition had been in existence for at least a year. A pimple appeared on the upper portion of the right leg, it itched and was scratched, following which it spread with a fair degree of rapidity and continued to itch intensely. She went to a medical college clinic in the fall of 1931 and was given five injections of arsphenamine. The last treatment was in October, 1931.

**Examination**—The same general characteristics that have been noted in the foregoing cases were a part of this infection. The size of the lesions at the beginning of treatment with Fouadin June 22, 1932, was of the vulva perineum and anus anteroposterior 16 cm lateral 7.5 cm at the upper margin of the inner surface of the right leg length, 7 cm, breadth, 2.5 cm.

Figure 9 obviates the necessity for further description.



Fig 8 (case 5)—Healing without scars

**Treatment and Result**—After the third injection of Fouadin (5 cc.) the secretion from the granuloma had almost ceased and a scab began forming, which came off before the fifth injection. Another formed, which later came off July 4, an injection caused diarrhea, and this occurred at four consecutive treatments. July 10 injections began causing headaches, nausea and vomiting which was treated at each occurrence with the administration of camphorated tincture of opium in 2 drachm (7.5 cc) doses. After that, Dr. Dodson followed the Fouadin with injections of 1 cc. of 1:1000 solution of epinephrine hydrochloride. He also gave 2 drachms (7.5 cc.) of camphorated tincture of opium before the reactions set in.

The picture that is reproduced in figure 10 of the healed lesions was taken, August 2 forty-one days after the beginning of treatment. The same bleaching, or lack of skin pigmentation, is again noticed. This characteristic was noticed in all the cases except case 2.

Treatment with Fouadin from June 22 to Aug 1, 1932, brought about a complete cure.

**CASE 7—History**—A Negro, aged 36 complained of a chronic, painful penile ulcer. The onset, six months before, was characterized by an itching pimple on the shaft of the

penis near the pubic hairs. The discharge was foul smelling and profuse. During the last six weeks the ulcer had become very painful. The pain was worse at night. The patient had had "shots" for syphilis during the life of the ulcer, but no local treatment had been effective.



Fig 9 (case 6)—Before treatment

**Examination**—On the shaft of the penis near the right penoscrotal junction, there was an irregular, dirty, granulating ulcer, 1½ inches (3.7 cm) wide and 2 inches (5 cm) long. It gave off a foul odor and a quantity of discharge. Figure 11 A shows it well.

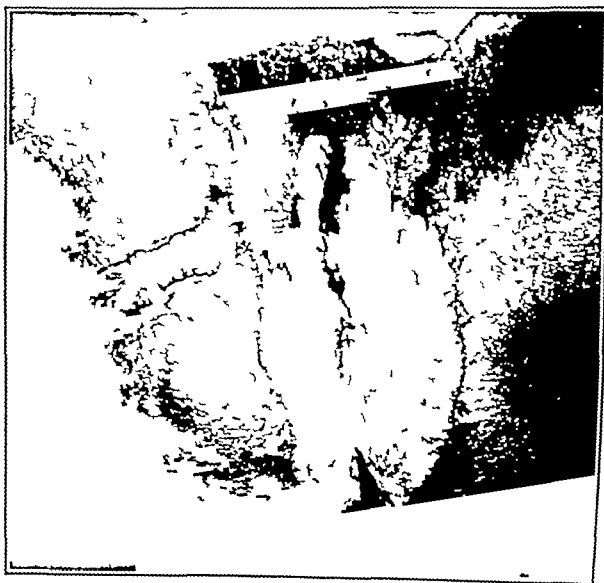


Fig 10 (case 6)—Result after forty-one days of treatment.

**Treatment and Result**—The response of this ulceration was slow at first. Three injections brought but little change in it. However, after the fifth injection, the healing was rapid and complete, with the exception of slight depigmentation, it was

difficult to locate the site of the former condition. A total cure resulted with ten injections of Fouadin. The pain disappeared after the fourth injection. There has been no recurrence in this or in any other case to date (fig 11 B).

#### COMMENT

We treated seven other cases in this series of experiments, but, since our picture data are not yet complete, we will not present them in detail in this already lengthy report. Suffice it to say that in no case has the

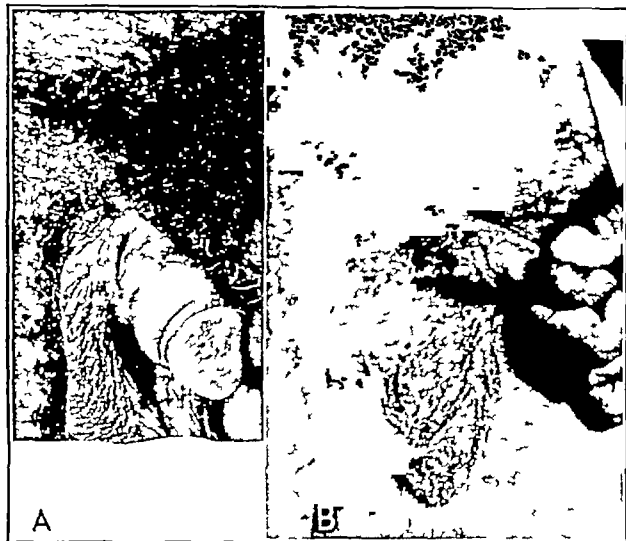


Fig 11 (case 7)—Condition A before treatment B after treatment.

treatment failed, the final result in all tallying closely with the cases reported in detail.

#### CONCLUSIONS

1 In treating fourteen cases of granuloma inguinale with Fouadin, we failed to notice any reaction that could be called dangerous or which revealed contraindications to its routine use in this affliction.

2 Fouadin seems to be generally superior to antimony and potassium tartrate in the treatment of this tropical ulceration.

3 Judging from our observations in this limited number of cases, we are unanimously agreed that Fouadin is a safe and rapid specific for granuloma inguinale.

#### EXPLANATORY NOTE

No apology is offered for presenting this preliminary report, based on the very evident paucity of clinical material, for the simple reason that we have been so favorably impressed with the behavior of Fouadin that we are not willing to keep the medical world longer in ignorance of this boon to granulomatous humanity. *The desire to better the sad lot of these unfortunate ones urges haste.*

It is our desire to publish an extensive report of this form of treatment later. In order that the profession may obtain a better knowledge of the amount of granuloma inguinale in the United States—or indeed, for that matter, in the world—and so that it may soon be informed of the results of extensive treatment with Fouadin, may we request all physicians both in our country and elsewhere to report their cases to Thomas V. Williamson, M.D., Suite 818, Medical Arts Building, Norfolk, Va., as soon as may be.

## THE IMPORTANCE OF TUBERCULOSIS IN NATIONAL DEFENSE

E. A. MEYERDING, M.D.

Lieutenant-Colonel Medical Corps Reserve U. S. Army

ST. PAUL

Tuberculosis cost the United States government more than \$46,000,000 in 1932 for service connected compensation alone. This is only part of the bill paid annually for tuberculosis. The cost for hospitalization for tuberculosis multiplies this bill by many thousands of dollars. From 1924 to 1932 there were 61,330 veterans hospitalized for tuberculosis, occupying a sufficient number of beds to quarter two and one-fourth army divisions. In this age of pensions and the tendency to government health services, every known scientific medical procedure should be utilized to reduce the burden to the taxpayer.

Knowledge of the early diagnosis of tuberculosis has changed greatly during the past few years through the increasing efficiency of x-ray apparatus and the more practical application of the tuberculin test. The veterinarian prevents the spread of tuberculosis in herds of cattle by using the tuberculin test. It is possible to obtain approximately the same result in the human being by making use of the new medical scientific procedures. Just as typhoid has been brought under control by epidemiologic supervision, so tuberculosis may be finally conquered.

There have been several noteworthy surveys utilizing this procedure, particularly in the Lymanhurst school in Minneapolis, the University of Minnesota, Massachusetts with the ten year program, North Carolina, the University of Pennsylvania, New York City and Detroit. Results of these surveys show conclusively that it is possible to discover tuberculosis early, in fact, so early as to precede the appearance of clinical symptoms of any kind. More than 80 per cent of the tuber-

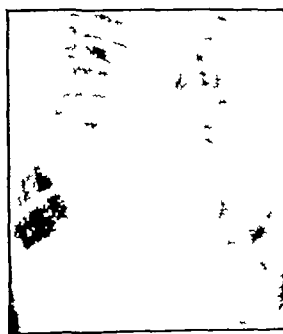


Fig 1—Appearance of chest of C. P., a man aged 24 whose father died of tuberculosis. The tuberculin test was positive on admission to the university. A roentgenogram of the chest Feb. 16, 1932, showed evidence of the first infection type of tuberculosis with the reinfection type moderately advanced involving the left upper lung field.



Fig 2—Same chest as in figure 1 April 15, 1932, showing partial collapse of left lung by artificial pneumothorax. The patient has remained ambulatory and his general health has been excellent until the present March 1933.

culosis discovered today is moderately advanced or advanced tuberculosis. With the modern intracutaneous tuberculin test and roentgen technic, this disease can be detected when there is only a minimal pathologic change.

Abstract from a thesis submitted by the author for promotion to Colonel of the Medical Corps Reserve.

The national defense forces and other government agencies are ideal groups of which to make such a survey on a large scale. The army, the navy and the national guard could incorporate into their enlistment examinations this early diagnostic procedure. Civilian groups could be tested in the R O T C, the C M T C and the reserve officers camps. The coast guard, post office department and other departments could also carry out this investigation. Not only could the tuberculin test and the roentgenogram be incorporated in the physical examination at enlistment, but also an annual examination could be given to the troops to determine the possibility of infection while in the service.

The advisability of introducing this early diagnosis of tuberculosis into the army is manifest in the annual report of the surgeon general of the army for 1932, in which he states that tuberculosis hospitalization alone costs more than \$500,000 annually.

The sum of \$400,090,176 is the total amount paid out in compensation to World War veterans for tuberculosis from 1923 to 1932. This is  $33\frac{1}{3}$  per cent of the total amount paid in compensation, and it does not include hospitalization. In 1932, \$46,313,184 was paid for compensation and active disability awards for tuberculosis. That is 26 per cent of the total for 1932 paid for all disabilities. Seven hundred and eighty-two emergency officers, retired for tuberculosis, were paid \$1,238,316 in 1932.

The splendid record for hygiene and sanitation of the American army during the World War is well known to all. The high standards set in 1917 encourage one to believe that tuberculosis control in the next great emergency will be comparable with that of the control of typhoid in 1917.

It is apparent that bankruptcy, or a period of stagnation, similar to what the states of the Confederacy went through after the Civil War and from which some are still suffering, has been threatening the United States. Tuberculosis plays a big part in the postwar bill, and every possible known agency that would in any way curtail this expense should be thoroughly investigated.

#### MODERN EARLY DIAGNOSIS OF TUBERCULOSIS

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moderately advanced or advanced tuberculosis and would have required several years of sanatorium treatment. The case reported here is one of the early ambulatory types.

I have seen several young men and women at the University of Minnesota under ambulatory treatment for tuberculosis. Then, again, I have seen the robust individual with no symptoms but with extensive destruction, as the case of the football player presented here demonstrates. Discovery of this type of case can be made only by a routine tuberculin test and roentgen examination of the positive reactors. This type of tuberculous patient was undoubtedly drafted in large numbers into our national defense forces during the World War and today is placing a tremendous tax burden on the country. The case of B W, who was considered robust, is one of this type.

B W, a youth, aged 20 (fig 3), in the football season of 1931 was the crack blocking halfback for a champion college football team. At the end of the season he went in for basket-

ball. Early in December, he noticed that he was becoming more easily fatigued. On the advice of the coach he went to see a physician, who took a roentgenogram of his chest (fig 4).

In December, 1932, the sanatorium physician said that the disease had progressed, there had been a hemorrhage, and the young man's condition was serious.

There are apparently many young men with progressive tuberculosis who seem to be in perfect physical condition. If this young man had applied for military service in September, 1931, what chance would there have been of discovering his pathologic condition without the use of the tuberculin test and the roentgen examination?

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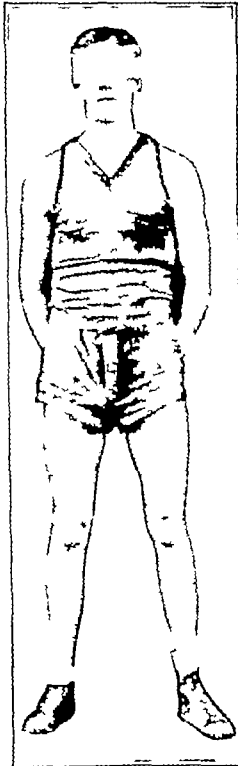


Fig 3—Appearance of B W during football season in 1931



Fig 4 (B W)—Pulmonary tuberculosis of the adult and destructive type involving approximately the upper half of the right lung. In the left lung hilus are some rather dense and irregular shadows which are believed to be due to calcium deposits representing the first infection or childhood type of tuberculosis. A slight shadow in the left first interspace near the periphery suggests a tuberculous lesion.

difficult to locate the site of the former condition. A total cure resulted with ten injections of Fouadin. The pain disappeared after the fourth injection. There has been no recurrence in this or in any other case to date (fig 11 B).

## COMMENT

We treated seven other cases in this series of experiments but, since our picture data are not yet complete, we will not present them in detail in this already lengthy report. Suffice it to say that in no case has the

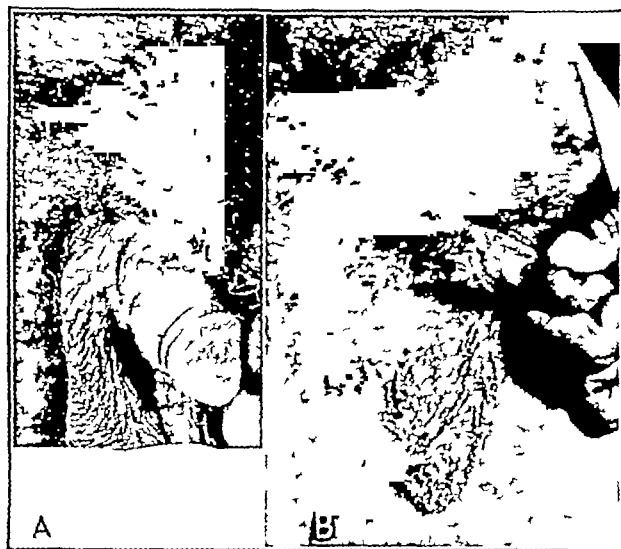


Fig 11 (case 7)—Condition A before treatment B after treatment.

treatment failed, the final result in all tallying closely with the cases reported in detail.

## CONCLUSIONS

1 In treating fourteen cases of granuloma inguinale with Fouadin, we failed to notice any reaction that could be called dangerous or which revealed contraindications to its routine use in this affliction.

2 Fouadin seems to be generally superior to antimony and potassium tartrate in the treatment of this tropical ulceration.

3 Judging from our observations in this limited number of cases, we are unanimously agreed that Fouadin is a safe and rapid specific for granuloma inguinale.

## EXPLANATORY NOTE

No apology is offered for presenting this preliminary report, based on the very evident paucity of clinical material, for the simple reason that we have been so favorably impressed with the behavior of Fouadin that we are not willing to keep the medical world longer in ignorance of this boon to granulomatous humanity. The desire to better the sad lot of these unfortunate ones urges haste.

It is our desire to publish an extensive report of this form of treatment later. In order that the profession may obtain a better knowledge of the amount of granuloma inguinale in the United States—or indeed, for that matter, in the world—and so that it may soon be informed of the results of extensive treatment with Fouadin, may we request all physicians both in our country and elsewhere to report their cases to Thomas V. Williamson, M.D., Suite 818, Medical Arts Building, Norfolk, Va., as soon as may be.

THE IMPORTANCE OF TUBERCULOSIS  
IN NATIONAL DEFENSE

E. A. MEYERDING, M.D.

Lieutenant-Colonel, Medical Corps Reserve, U. S. Army

ST. PAUL

Tuberculosis cost the United States government more than \$46,000,000 in 1932 for service connected compensation alone. This is only part of the bill paid annually for tuberculosis. The cost for hospitalization for tuberculosis multiplies this bill by many thousands of dollars. From 1924 to 1932 there were 61,330 veterans hospitalized for tuberculosis, occupying a sufficient number of beds to quarter two and one-fourth army divisions. In this age of pensions and the tendency to government health services, every known scientific medical procedure should be utilized to reduce the burden to the taxpayer.

Knowledge of the early diagnosis of tuberculosis has changed greatly during the past few years through the increasing efficiency of x-ray apparatus and the more practical application of the tuberculin test. The veterinarian prevents the spread of tuberculosis in herds of cattle by using the tuberculin test. It is possible to obtain approximately the same result in the human being by making use of the new medical scientific procedures. Just as typhoid has been brought under control by epidemiologic supervision, so tuberculosis may be finally conquered.

There have been several noteworthy surveys utilizing this procedure, particularly in the Lymanhurst school in Minneapolis, the University of Minnesota, Massachusetts with the ten year program, North Carolina, the University of Pennsylvania, New York City and Detroit. Results of these surveys show conclusively that it is possible to discover tuberculosis early, in fact, so early as to precede the appearance of clinical symptoms of any kind. More than 80 per cent of the tuber-

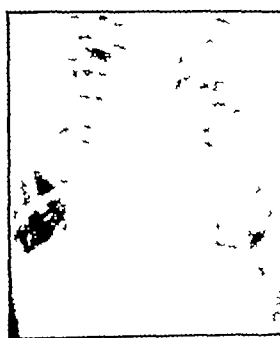


Fig 1—Appearance of chest of C. P., a man aged 24 whose father died of tuberculosis. The tuberculin test was positive on admission to the university. A roentgenogram of the chest, Feb. 16, 1932, showed evidence of the first infection type of tuberculosis with the reinfection type moderately advanced involving the left upper lung field.



Fig 2—Same chest as in figure 1 April 15, 1932, showing partial collapse of left lung by artificial pneumothorax. The patient has remained ambulatory and his general health has been excellent until the present March 1933.

culosis discovered today is moderately advanced or advanced tuberculosis. With the modern intracutaneous tuberculosis test and roentgen technic this disease can be detected when there is only a minimal pathologic change.

Abstract from a thesis submitted by the author for promotion to Colonel of the Medical Corps Reserve.

The national defense forces and other government agencies are ideal groups of which to make such a survey on a large scale. The army, the navy and the national guard could incorporate into their enlistment examinations this early diagnostic procedure. Civilian groups could be tested in the R O T C, the C M T C and the reserve officers camps. The coast guard, post office department and other departments could also carry out this investigation. Not only could the tuberculin test and the roentgenogram be incorporated in the physical examination at enlistment, but also an annual examination could be given to the troops to determine the possibility of infection while in the service.

The advisability of introducing this early diagnosis of tuberculosis into the army is manifest in the annual report of the surgeon general of the army for 1932, in which he states that tuberculosis hospitalization alone costs more than \$500,000 annually.

The sum of \$400,090,176 is the total amount paid out in compensation to World War veterans for tuberculosis from 1923 to 1932. This is 33 1/3 per cent of the total amount paid in compensation, and it does not include hospitalization. In 1932, \$46,313,184 was paid for compensation and active disability awards for tuberculosis. That is 26 per cent of the total for 1932 paid for all disabilities. Seven hundred and eighty-two emergency officers, retired for tuberculosis, were paid \$1,238,316 in 1932.

The splendid record for hygiene and sanitation of the American army during the World War is well known to all. The high standards set in 1917 encourage one to believe that tuberculosis control in the next great emergency will be comparable with that of the control of typhoid in 1917.

It is apparent that bankruptcy, or a period of stagnation, similar to what the states of the Confederacy went through after the Civil War and from which some are still suffering, has been threatening the United States. Tuberculosis plays a big part in the postwar bill, and every possible known agency that would in any way curtail this expense should be thoroughly investigated.

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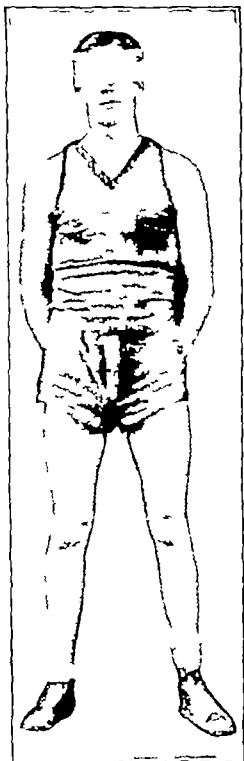


Fig 3—Appearance of B W during football season in 1931

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Fig 4 (B W)—Pulmonary tuberculosis of the adult and destructive type involving approximately the upper half of the right lung. In the left lung hilus are some rather dense and irregular shadows which are believed to be due to calcium deposits representing the first infection or childhood type of tuberculosis. A slight shadow in the left first interspace near the periphery suggests a tuberculous lesion.

In Minnesota it has been found that school children, from the grades to high school, vary anywhere from 2.5 per cent positive reactors to as high as 80 per cent. There is one high school in a small town in Minnesota that had 100 per cent negative reactors. The lower percentages were in the rural districts. High schools of the large cities average about 28 per cent. In Philadelphia, one school had 72.6 per cent positive reactors and another school in the same city had 90.2 per cent. The freshmen in the universities vary, with 16 per cent positive reactors in Iowa, 33 per cent in Minnesota, 50 per cent at Leland Stanford and 59 per cent at Yale. The incidence of tuberculosis depends on environmental conditions.

#### CONCLUSIONS

1 There is a tuberculosis problem in national defense.

2 The utilization of the intracutaneous tuberculin test and the x-rays will screen out most of the infected individuals. The new rapid portable and inexpensive roentgen procedure used in New York City which is made by the Powers Reproduction Corporation, seems to be operating satisfactorily. More than 150 exposures can be made with ease in an hour. Paper film is used. There is a difference of opinion as to the efficacy of the paper film but I understand that experiments are being made with a translucent medium.

3 Modern roentgen examinations are practical—as to both time and cost.

4 It is not to the advantage of the individual to have a tuberculous infection.

(a) In the average case, a minimal (first, or childhood type) infection will usually resolve and heal with a calcareous deposit and resulting calcareous changes in the glands.

(b) The second infection in the average case in which there has been an early first infection as described, produces localized destruction. This may become chronic with local destruction and possible metastasis to other parts of the body. This is the most common type of tuberculosis encountered in the northern part of the United States.

(c) In the acute miliary and septicemic types of tuberculosis, one must remember that resistances are known to depend to a considerable degree on environmental factors susceptible of modification. Among these factors are inadequate or unsuitable food, industrial fatigue, physiologic stress and a low standard of living, all of which play an important part, together with faulty habits, such as alcoholic excess, in lowering resistance.

It is obvious that these factors operate only to precipitate miliary tuberculosis in a "tuberculized" population, since they do not cause tuberculosis but merely activate or aggravate existing lesions (endogenous).

A superinfection on a nonreactor, or in so-called virgin soil, together with accompanying "stress," as a rule does not permit the usual resolution of the first or childhood type of tuberculous infection. It results, instead, in a continuous pathologic condition proceeding without pause from the first into the destructive type. This superinfection causes superdestruction and brings about more rapid and more drastic complications, such as bursting of glandular tissue and emptying contents into the blood stream or bronchi, permitting miliary infections.

(d) From this one may deduce that, if one must have a tuberculous infection, it would be best to have the minimal, first or childhood type of infection early

so that when and if the second infection should occur the destruction might possibly be more gradual. I believe, however, that it is not necessary for an individual to have tuberculosis, as shown by the following figures. The entering class of the University of Iowa is only 16 per cent infected with the disease, as compared to the university class of Stanford University, California, where it is 50 per cent. Proper segregation of infected individuals (by segregation I mean the patients with early involvement placed in a quiescent or noninfectious condition and those with the more advanced type in the hospital for sanatorium treatment) will remove any inevitable contact with the disease.

(e) The veterinarians have shown that tuberculosis can be eliminated in cattle and that the herds are much better off without tuberculosis. Medical research seems to indicate that this is also true in human beings. There is good reason to believe that the rate can be cut to a negligible figure if the principles involved in the veterinarian procedure, i. e., universal testing and segregation of carriers, are applied to man. Army discipline, providing control of the individual, gives to the national defense forces an excellent opportunity to lead the way in the epidemiologic control of tuberculosis in man.

11 West Summit Avenue

## FOCAL ENLARGEMENT OF THE TEMPORAL BONE AS A SIGN OF BRAIN TUMOR

### SECOND REPORT

ROSS H. THOMPSON, M.D.  
PHILADELPHIA

In a recent report,<sup>1</sup> two cases of bulging of the squamous portion of the temporal bone in young children were described by me which were due to an underlying tumor of the temporal lobe found at operation. One was the result of a meningeal fibroblastoma with cystic formation, the other, of a glomatous cyst. The latter, by displacement of the midline structures, had produced a milder degree of bulging in the opposite squama. In one case therefore, the bulging was bilateral, in the other, unilateral.

My object in this report is to record and discuss three instances of bulging of the squamous portion of the temporal bone observed in young adults aged from 23 to 28, in each of which an underlying tumor was found at operation. In two patients, evidence of organic nervous disorder was present in childhood.

### REPORT OF CASES

*CASE 1—Bulging of the squamous portion of the left temporal bone directly overlying a large left temporal lobe cyst probably of glomatous origin.*

*History.*—A man, aged 28 admitted to the service of Dr. William G. Spiller in the University of Pennsylvania Hospital Dec. 10, 1932, complained of convulsive seizures over a period of thirteen years. When he was a child 11 years of age, for no explainable reason a weakness of the right upper and lower limbs developed rather suddenly. He was able to walk, but the right-sided weakness continued over a period of two years gradually disappearing completely. During the two years the

Read before the Philadelphia Neurological Society Feb. 24, 1933.  
From the Neurological Department of the University of Pennsylvania School of Medicine, and from the service of Dr. W. J. Gardner of the Cleveland Clinic, Cleveland.  
1 Thompson, R. H.: Focal Enlargement of the Temporal Bone as a Sign of Brain Tumor. J. A. M. A. 98: 379 (July 30) 1932.

right foot dragged, but not enough to give him much annoyance. From the age of 13 to 15 years he was, as far as he knows, symptom free. At the latter age the convulsive seizures began, not accompanied by any weakness or dragging of the right toes. According to his description the attacks were of the grand mal type, frequent and often resulting in injury. There was nothing in their occurrence of localizing value and there were no definite auras. Two convulsions, witnessed by patients, were described as generalized tonic and clonic spasms with unconsciousness.

**Examination.**—The patient was naturally left-handed, as was indicated by writing, eating, throwing a baseball and other spontaneous movements. He stated, however, that prior to the age of 7 years efforts were made to teach him right-handedness. Since the age of 7 he has used his left hand in preference to the right.

After he walked a distance of ten paces or more, the right foot showed signs of fatigue, the toes momentarily scraping on the floor with each forward movement of the foot. He was unaware of this scraping tendency and stated that he had never known weakness or clumsiness in either foot since the period between 11 and 13 years of age. Both right extremities were found to be weaker than the left, a little more than could be accounted for by the left-handedness, and there was distinct lower right facial weakness. Each of the tendon reflexes on the right side was decidedly more active than the corresponding one on the left. On the right there was a brief ankle clonus, Troemner, Rossolimo and Mendel-Bechterew phenomena, and an absence of abdominal and cremasteric reflexes. Muscular tone and synergism were normal throughout.

The squamous portion of the left temporal bone was prominent, presenting the appearance of being bulged outward. The left temporal artery was tortuous and much more conspicuous than the right.

Ophthalmologic examination showed a complete right homonymous hemianopia with preservation of central vision and a slightly enlarged blind spot in the left eye. The fundi gave no evidence of hemorrhage, exudates or choking of the disks.

Roentgen examination revealed the presence of the prominence of the left squama but no indication of increased intracranial pressure or pathologic condition of the skull. The sella turcica was normal.

**Operation** (by Dr. Charles H. Frazier).—The bone constituting the left squama was thinner than is usually encountered. A large cyst deep in the temporal lobe was evacuated, more than 75 cc. of fluid being recovered. Exploration and possible removal of the temporal lobe was considered but deemed inadvisable because of the possibility of the presence of some of the speech centers in the left temporal lobe, even though the patient was left-handed. The type of tumor was, therefore, not determined.

Examination of the bone flap by Dr. Bernard J. Alpers revealed no invasion of the tumor cells or any abnormality.

I am indebted to Dr. W. James Gardner of the Cleveland Clinic for the notes of, and permission to report, the following two cases.

**CASE 2.**—*Bulging of the squamous portion of the left temporal bone directly overlying a large left temporal lobe cyst, less marked bulging of the squamous portion of the right temporal bone.*

**History.**—A woman, aged 23, presented herself, Aug. 25, 1932, complaining of headache, convulsions and weakness of the right extremities. It was stated that at the age of 3 years the patient had "infantile paralysis," at which time the right arm and leg were completely paralyzed for three months. Almost complete recovery occurred, apparently. However, at the age of 9 years the right limbs again became weak, so much so that she began to use the left hand in writing and had continued to do so since. For the previous two years, the weakness in the right arm and leg had been progressing more rapidly and for the past year attacks of dizziness had developed. Eight months before admission she had an attack of unconsciousness accompanied by twitching of the right side of the face and of

both right extremities. Since that time she experienced increasing headaches in the frontal and temporal regions. Three weeks and two weeks before admission similar attacks involving the right side were observed, but without loss of consciousness. During the past few months there had occurred occasional attacks of nausea and vomiting.

**Examination.**—On examination by Dr. Gardner, the patient presented a definite paresis of the right extremities and of the right lower part of the face. There was also a slight impairment of pain and tactile perception over the right side, including the face. The corneal, pharyngeal, palatal and abdominal reflexes were diminished on the right side. The biceps, triceps, patellar and achilles reflexes were exaggerated on the right side, and there was a positive Babinski sign when the right sole was stroked. There was no astereognosis, apraxia or diminution of deep sensation. On account of the pronounced weakness, it was not possible to test for synergy on the right side.



Fig. 1 (case 1).—Bulging of the squamous portion of the left temporal bone directly overlying a large left temporal lobe cyst.

Examination of the skull revealed a swelling of the squamous portion of each temporal bone, particularly marked in the left. The swellings were not tender and were stated by Dr. Gardner to have been more pronounced than figure 2 would lead one to believe. (The photograph was obtained with some difficulty after the patient had been anesthetized with tribrom-ethanol.)

Ophthalmologic examination revealed a low grade edema of both optic disks which was not measurable. Visual acuity was 6/75 in the right and 6/6 in the left eye. Visual fields were full, both for form and color. There was no displacement of the globes.

Roentgen examination showed a large calcified tumor in the left temporoparietal region.

Laboratory examination disclosed nothing significant.

**Operation** (by Dr. W. James Gardner).—A large section of bone was removed from the left temporoparietal region, August 26. In the center of the exposed cortex was a widened, flattened gyrus and a large venous channel. A brain cannula introduced through this gyrus encountered a large quantity of

syrupe, yellow fluid. The cyst, about the size of an orange, extended to the falx, anteriorly beyond the fissure of Rolando, posteriorly to the occipital lobe and downward into the temporal lobe. At several points there were calcifications in the cyst wall. The wall was covered with cholesterol crystals which imparted to it a silvery appearance not unlike a freshly painted radiator. The gross diagnosis was cholesteatomatous cyst. It appeared likely that a complete removal of the lesion would necessitate considerable cerebral damage, which would



Fig. 2 (case 2)—Bulging of the squamous portion of the left temporal bone directly overlying a left temporal lobe cyst; less marked bulging of the right temporal bone.

result in a permanent hemiparesis and, if the speech center was located in this hemisphere a serious degree of aphasia. It was decided, therefore, not to attempt a complete removal at the time. Approximately one third of the lining membrane of the cyst was, therefore, removed by blunt dissection, following which the remaining cavity was irrigated by saline solution, the dura closed closely, the section of bone replaced and the wound closed.

Microscopic examination of the bone flap was not made. Aside from the bulging, the macroscopic appearance was in all respects normal.

The pathologic diagnosis was gliomatous cyst.

*CASE 3*—Fulness of the squamous portion of the left temporal bone and enlargement on the left side of the frontal bone, mandible and probably also of the zygoma and maxilla with a fibroblastoma situated on the left lesser wing of the sphenoid bone.

*History*—A man aged 23, came to Dr. Gardner at the Cleveland Clinic July 7, 1932, complaining of headache, dizziness and blurring of vision. He had been perfectly well until April 1932, when he was injured in a baseball game, striking the right occipital region and being rendered unconscious for about five minutes. His symptoms developed on the following day and continued unchanged.

He had had facial asymmetry; his mother stated all his life the left side of the face appearing larger.

*Examination*—There was tenderness in the left temporal region and hypertrophy of the bones of the left side of the face (the frontal, zygoma, maxilla and mandible) together with a fulness of the left temporal region. The sense of smell was somewhat impaired on the left side. The right patellar reflex was absent, the left, hypo-active. On questioning the patient stated that he had some tremor of the right leg after the accident.

Visual acuity was 6/6 in each eye. The fields showed a right-sided notching in the horizontal line, possibly indicative of a partial right homonymous hemianopia. Choking of each disk was present to between 2 and 3 diopters.

Cerebrospinal fluid examination showed that the pressure was 500 mm. of water and the fluid slightly xanthochromic.

Roentgen examination disclosed a line in the right parietal region suggestive of fracture, an indistinct calcification in the left frontal region, and slight erosion of the posterior clinoid processes.

Clinical diagnosis appeared to lie between a subdural hematoma and a left frontal lobe tumor. Dr. Gardner decided to make a bilateral trephining and, if a subdural hematoma was not encountered, to perform a ventriculogram. As no hematoma was detected an attempt was made to inject air into the ventricles. As neither ventricle was met, an encephalogram was decided on, although the bone hypertrophy of the left side of the face, the fulness of the left temporal region and a suspicious shadow in the roentgenogram suggested that the lesion was in the left frontotemporal region.

The resulting film disclosed no air within the cranial cavity, excepting a small amount above the corpus callosum, which was displaced to the right, indicating an expanding lesion of the left cerebral hemisphere. The cisterna magna was well outlined, signifying that a cerebellar hernia was not present.

*Operation* (by Dr. Gardner)—A left frontotemporal craniotomy was performed and the bone found to be very porous and hemorrhagic throughout almost the entire exposure. A meningeal fibroblastoma was discovered arising from the lesser wing of the sphenoid bone on the left side.

The bone immediately overlying the tumor was rather thick, was quite soft and bled freely. Microscopic examination of a



Fig. 3 (case 3)—Fulness of the squamous portion of the left temporal bone and enlargement of the bones of the left side of the face with a fibroblastoma situated on the left lesser wing of the sphenoid bone.

specimen from the left frontal and one from the left temporal portion of the flap showed cancellous bone, but no tumor cells could be demonstrated.

The specimen consisted of a tumor mass in several fragments weighing 25 Gm. It was purplish red, soft and spongy in character and extremely friable.

The microscopic diagnosis was fibroblastoma.

Examination of the dura (two specimens taken from the immediate overlying region) showed thickening and the pres-

ence of small nodular projections on the surface, varying in size up to 3 mm in diameter. Microscopically one specimen showed masses of tumor cells in a localizing plaque on the surface, the other showed no evidence of tumor cells.

## COMMENT

The most important feature to be considered in the presentation of these three cases is the discovery in adult life of bulging of the squamous portion of the temporal bone directly overlying a brain tumor. How long the prominences had been present before discovery is not known but there is evidence that they probably occurred in childhood. Indeed, if the compensatory dilatation of the skull is to receive a satisfactory explanation commensurate with present knowledge of the normal development of the brain and braincase it is essential that the onset of the tumors be placed in early life.

In man, the skull is an osseous box having developed from a membranous and a cartilaginous embryonic state. The sides and the convexity of the vault are originally membranous, and the skull base and the facial skeleton, originally cartilaginous. Later, nests of bone areas or points of ossification appear in both membranous and cartilaginous structures. At the time the development of the cartilaginous base of the skull begins, the brain is already developed and shaped to some extent.

The ideas of the relation of the development of the skull to growth of the brain have within late years undergone change. Not so long ago it was held that microcephalic idiocy was caused by the failure of the skull to expand sufficiently to permit normal cerebral development. Lannelongue's operation of linear craniotomy was devised and performed to overcome the effect of premature suture closure. Spiller,<sup>2</sup> in 1898 carefully considered the advisability of this operation and his paper contained the views of W. W. Keen from a personal experience covering eighteen cases. It is now generally recognized that growth of the brain is the principal factor that influences suture closure and also the size and shape of the cranium. Dabelow<sup>3</sup> described how the curvature of the brain at the time of the development of the cartilaginous base of the skull was the determining factor for the type of curvature of the base of the skull. He related how the parts of the skull had to adjust themselves to the brain, forming like a cast about it, imitating the conformation of the brain.

Bolk<sup>4</sup> stated that the different bones of the skull cannot unite before the brain has attained its final volume. According to him, the physiologic function of the sutures is to produce new bony tissue along the margins of the skull bones for the sake of the enlarging braincase. Their function he explained, is continued as long as the braincase needs enlarging, i. e. as long as the brain increases in volume. Schüller<sup>5</sup> stated that the growth of the skull and its final size depended in the first place on the size of its contents. If the brain is backward in its development, the skull is in most cases smaller. On the other hand, he continued an abnormal enlargement of the skull contents always

causes an excessive dilatation of the skull, provided the enlargement of the contents occurs at a time when the skull can still change its size.

Just how long the braincase remains plastic and amenable to enlargement and molding by the development of an abnormal intracranial content such as an encroaching tumor, is a question. Merkel<sup>6</sup> was of the opinion that the skull enlarges normally under the stimulus of the growth of the brain up to the seventh year. "At puberty," he stated, the maximum thickness is usually attained and at 20 growth in thickness is completed. He noted, however, that individual variations are common both in bony development and in closure of the sutures. In some, the sutures close early, in others, they remain open for many years beyond the average.

Loeschcke and Wennoldt<sup>7</sup> cited Thoma to the effect that the marginal appositional growth of the sutures is completed in the third year of life and that after this period only interstitial growth occurs. They believed these age limits to be too early. In their complete series of patients under 20 years of age they found the appositional marginal growth still incomplete. Between the twentieth and thirtieth years, they stated, the skull and brain come to the end of their growth but there are wide individual variations so that in some persons these limits may be lower or higher.

In these quotations I think lies the essence of the explanation of the occurrence of the bulging of the squamous portion of the temporal bone in these three young adults. The only obvious explanation is that in each the tumor was present for a considerable time and exerted direct pressure on the braincase in its naturally weakest part at a time when it was still plastic. An early occurrence permitted the tumor to take advantage of the resources of the skullcase to be molded by the added pathologic mass because of its inherent elasticity. Consequent added intracranial capacity could permit the necessary decompression to remove or modify the symptoms existing at the time before the bulging occurred.

In case 1 the paresis of the right extremities developing at the age of 11 years may or may not have been indicative of a lesion of the left cerebrum. Also, the disappearance of the weakness after a period of two years may or may not have been an indication of decompression of the growth by the giving way of the left squama. The patient stated that he was never aware of hemianopia; never had weakness of the right extremities after the age of 13 years or of the right lower part of the face at any time and never recognized any degree of asymmetry in his skull. Nevertheless he had, on admission, a right hemiparesis, a right homonymous hemianopia and a bulging of the left squama. His only complaint was the grand mal seizures. Snapshots taken at the age of 18 years show that the prominence in the left temporal region was just about as apparent then as now. It would appear, therefore, that the first symptoms of tumor of the left temporal lobe began at the age of 11 years, and that weakness of the right side gradually lessened in intensity within two years and then remained distinctly lessened to such a degree that he did not recognize it. The lack of knowledge of inability to see to the right highly valuable in confirming the diagnosis might sug-

<sup>2</sup> Spiller, W. G. On Arrested Development and Little's Disease. *J. Nerv. & Ment. Dis.* 25: 81 (Feb.) 1898.

<sup>3</sup> Dabelow, A. Ueber Korrelationen in der phylogenetischen Entwicklung der Schädelform. II. Beziehungen zwischen Gehirn und Schädelbasisform bei den Mammaliern. *Morphol. Jahrb.* 67: 84-133 (June) 1931.

<sup>4</sup> Bolk, L. On the Premature Obliteration of Sutures in the Human Skull. *Am. J. Anat.* 17: 495-1915.

<sup>5</sup> Schüller, A. Röntgen Diagnosis of Diseases of the Head translated by F. F. Stocking. St. Louis: C. V. Mosby Company, 1913.

<sup>6</sup> Merkel, F. S. *Handbuch der topographischen Anatomie*. Bruns, Wick, F. Vieweg & Sohn, 1885-1890, pp. 43 and 10.

<sup>7</sup> Loeschcke, H. and Wennoldt, Hedda. Ueber den Einfluss von Druck und Entspannung auf das Knochenwachstum des Hirnschädels. *Beitr. z. path. Anat. u. z. allg. Path.* 70: 406-1922.

gest so gradual an onset that plenty of time was afforded for its compensation. It is known that hemianopic patients do not always recognize their hemianopia.

In case 2 the sequence of events is much the same. The first appearance of weakness occurred in the right limbs at 3 years of age. Here, again, a more or less complete recovery ensued, but it was followed by a relapse at 9 years of age. The bulging of the opposite squama no doubt was caused by the shifting of the lateral ventricles and midline structures to the right, exerting direct pressure there.

It is interesting to note that complete hemiplegia and complete aphasia followed the removal of one third of the tumor wall of the cyst in a right-handed person. Both subsided satisfactorily, however, but not completely, and no further convulsions have occurred over a period of five months.

In case 3 in addition to the bulging of the left squama, there existed a hyperostosis of the left side of the face which the young man's mother stated had been present throughout life. The bulging is indicative of direct intracranial tumor pressure, as in the previous cases. But what explanation may be offered for the enlargement of the bones of the face? Cranial enlargement overlying meningeal fibroblastoma has received much recent study, but enlargement of the bones of the face in the immediate vicinity of a meningeal growth has not projected itself as far as is known into the literature. There does not seem to be, however, any reason why it might not occur.

Winkelman<sup>8</sup> found bony thickening and some tumor infiltration of the orbital roof in association with an overlying basal meningeal fibroblastoma. He referred to Spiller's<sup>9</sup> quotation of Pancoast, that the latter has seen roentgen evidence of increased density and thickening of bone in association with meningeal tumors of the base. List<sup>10</sup> cited Mayer, who found by roentgen examination hyperostosis of the petron in angle tumor without going into the nature of the histologic diagnosis. The base of the skull and the bones of the face, after all, have much in common with the bones of the vault in origin, structure and function. The facial bones do not contribute to the braincase but become differentiated to accommodate and protect the organs of the special sense and the upper part of the digestive path. Whatever may be the mechanism responsible for the bony morphogenesis, it would appear that its location is determined by the site of the tumor.

If the statement is true that the facial enlargement was present throughout life, what is its connection with the fibroblastoma? If the tumor produced a facial enlargement, it must have been present in extremely early life.

#### SUMMARY

1 Three instances of focal bulging of the squamous portion of the temporal bone, due to an underlying brain tumor, were discovered in adults, aged from 23 to 28, and afforded valuable information for diagnosis and operation.

2 In two cases, the bulgings probably occurred in childhood.

8 Winkelman N W. Hyperostosis and Tumor Infiltration of Base of Skull Associated with Overlying Meningeal Fibroblastoma. *Arch. Neurol. & Psychiat.* 23: 495 (March) 1930.

9 Spiller W G. Hyperostosis Associated with Underlying Meningeal Fibroblastoma. *Arch. Neurol. & Psychiat.* 21: 637 (March) 1929.

10 List Carl. Die Differentialdiagnose der Kleinhirnbrückenwinkel-erkrankungen mit besonderer Berücksichtigung der Tumoren. *Zschr. f. d. ges. Neurol. u. Psychiat.* 144: 73 1933.

3 Two cases were due to large glomatous cysts, one, to a meningeal fibroblastoma.

4 Two cases were unilateral, the other was bilateral, producing a milder bulging of the opposite squama.

5 The meningeal fibroblastoma, arising from the lesser wing of the left sphenoid bone, in addition to the bulging of the left squama, was associated with hyperostosis of the bones of the corresponding side of the face.

6 There is an influence of the growth of the brain on suture closure and on the size and shape of the braincase.

7 The size and shape of the young plastic skull is especially influenced by direct pressure from an encroaching intracranial tumor in the region of the squama.

8 The question arises as to whether or not a fibroblastoma of the base of the brain in the vicinity of the lesser wing of the sphenoid bone can produce hyperostosis of the facial bones of the ipsilateral side.

115 South Forty-Fourth Street

## THE USE OF THORIUM DIOXIDE IN THE DIAGNOSIS OF LIVER ABSCESS

ROBERT J REEVES, MD

AND

ELBERT D APPLE, MD

DURHAM, N. C.

During the last three years, numerous articles have appeared in the literature on the use of colloidal thorium dioxide in roentgenologic diagnosis. Most of this work has been experimental and, because of the questionable sequelae, it has not been widely used in clinical diagnosis. The Council on Pharmacy and Chemistry of the American Medical Association<sup>1</sup> recently gave a comprehensive report on the general use of the drug, it considered it still in the experimental stage.

According to available literature, thorium dioxide was first used clinically by Radt<sup>2</sup>. Since that time, many reports concerning its use in small series of cases have been recorded.

Stewart, Einhorn and Illick<sup>3</sup> have used thorium in the diagnosis of patients with varied clinical complications.

McDonald<sup>4</sup> used the drug as an aid in the clinical diagnosis in eighteen patients. At the time of his report, none of these cases had come to autopsy.

Menville<sup>5</sup> gives probably the most comprehensive report in the use of thorium dioxide in visualization of the lymphatic system.

#### DISTRIBUTION OF THORIUM IN TISSUES

Thorium dioxide possesses the property of depositing itself throughout the cells of the reticulo-endothelial system. The liver, spleen, bone marrow and lymphatic glands receive relatively the same amounts. Smaller

From the Department of Roentgenology, Duke University School of Medicine.

1 Thorotrast J. A. M. A. 99: 2183 (Dec. 24) 1932.

2 Radt P. A. New Method of Roentgenological Diagnosis of the Liver and Spleen After Injection of Contrast Metals. *Med. Klin.* 26: 1888-1891 (Dec.) 1930.

3 Stewart W. H., Einhorn, Max and Illick, Earl. Hepatography and Lymphography Following Injections of Thorium Dioxide, *Am. J. Roentgenol.* 27: 55-58 (Jan.) 1932.

4 McDonald I. G. The Use of Thorium Dioxide as an Aid to Clinical Diagnosis. *Canad. M. A. J.* 27: 136-137 (Aug.) 1932.

5 Menville L. J. and Ane J. N. Roentgen Visualization of Lymph Nodes in Animals. *J. A. M. A.* 95: 1796-1798 (May 21) 1932.

amounts have been found in the suprarenals, the ovary and the kidneys

Radt made histologic studies of the liver and spleen, one year and nine months after injecting thorium in mice. He was unable to find any pathologic changes. His conclusions were that it was a safe procedure and that the drug was nontoxic.

Shute and Davis<sup>6</sup> were impressed, however, by the widespread degeneration found in the liver and spleen. The dosage of Thorotrast used by them was considerably larger than is necessary to visualize these organs on the roentgenogram. These observations correspond with our results in which large doses of from 0.5 to 2 cc were given intravenously to small white mice. Smaller doses, from 0.05 to 0.1 cc, were well tolerated, without evidence of degenerative changes. Kadrnka<sup>7</sup> suggested the possibility of therapeutic effects, as he had two cases with advanced carcinoma which were considerably improved for a time. It has been hoped that by subcutaneous injection the lymphatics will take up the thorium and some of it will be secreted into tumor tissue, thereby producing more absorption of radiant energy. Menville<sup>8</sup> found that the lymphatic system did not take up thorium on intravenous injection. Small amounts of thorium were injected into the tissues surrounding blood vessels. Roentgenograms taken later showed the lymph nodes clearly visualized.

#### INHERENT DANGERS IN THE USE OF THORIUM DIOXIDE

The question of radioactivity of thorium dioxide is discussed fully by the Council on Pharmacy and Chemistry,<sup>1</sup> and insufficient time has elapsed to deter-

mine, because of the imperfect elimination, whether or not a partial conversion to mesothorium and radiothorium will occur.

There is practically no reaction when the substance escapes into the tissues about the vein.<sup>5</sup> Dickson<sup>8</sup> has attempted various methods of injection of thorium but has been unable to find definite harmful results. The questionable point remains that of ultimate toxicity.

As the majority of reports in the literature are chiefly concerned with the



Fig 1—Markedly enlarged liver and cavity measuring 14 cm. in diameter situated in the posterior aspect.

detection of hepatic metastases, other conditions are given in which the intravenous use of thorium dioxide is of value, but no case reports have been cited.

<sup>6</sup> Shute, Evan and Davis, M. E. Histologic Changes in Rabbits and in Dogs Following the Intravenous Injection of Thorium Preparations. *Arch. Path.* 16: 27-34 (Jan.) 1933.

<sup>7</sup> Kadrnka, S. Hepatosplenography. Radiologic Method of Exploration of the Parenchyma of the Liver and Spleen Through the Intravenous Introduction of Thorotrast. *Schweiz. med. Wchnschr.* 61: 425-427 (May 2) 1931. *Hepatosplenography*. *Radiology* 18: 371-377 (Feb.) 1932.

<sup>8</sup> Dickson, W. H. Hepatography. *Canad. M. A. J.* 27: 125 (Aug.) 1932.

The citation of this case will serve to illustrate the value of hepatosplenography as an aid to the diagnosis of liver abscess.

#### REPORT OF CASE

B. D., a white man aged 50, a farmer, was admitted to the medical service of Duke Hospital, Nov. 21, 1932, complaining of pain in the right upper part of the abdomen of seven weeks' duration, accompanied by a mild diarrhea.

The patient had been well until the last five years, during which time he had had intermittent attacks of diarrhea coming on every two or three months and lasting about two days. At various times during this period, blood had been noticed in the stool. Seven weeks prior to admission, he was forced to quit work because of a severe, sharp penetrating pain under the right lower costal margin. The pain was continuous and could not be relieved by sedatives. There was no nausea or vomiting. Four weeks before admission, his temperature became elevated for four days. Following this there was an intermittent diarrhea with as many as twelve stools a day. They were watery in character and at times contained mucus and blood.



Fig 2—After aspiration of the cavity.

Physical examination was essentially negative except for the large mass filling the right upper part of the abdomen and extending down into the flank, four finger-breadths below the costal margin. Examination of the blood was essentially negative except for a mild secondary anemia. Examination of the stool disclosed gross blood which was watery in character. *Amoeba histolytica* was disclosed by microscopic examination, which showed numerous motile organisms.

Emetine hydrochloride in 1 cc. doses was begun, December 18. Thorium dioxide was given in 12 cc. doses with a total dosage of 72 cc. over a period of fourteen days. Roentgen examination of the abdomen three days after the last injection disclosed a markedly enlarged liver and a large rounded area of diminished density situated in the posterior portion of the liver, measuring 14 cm. in diameter.

Jan. 7, 1933, the abscess was aspirated and about 300 cc. of muddy pus was obtained. No amebas were found on microscopic examination.

January 14, the patient was discharged with instructions to return for further treatment. The roentgen examination showed that the abscess cavity was about half its former size.

**Rapid Typing of Pneumococci**—A rapid typing for pneumococci that would avoid the present clinical delay is currently reported by Drs. R. H. Sia and S. F. Chung (*Proc. Soc. Exper. Biol. & Med.* 29: 792 [April] 1932) of the Peiping Union Medical College. The Sia technic consists in plating the clinical material on type-specific antiserum-agar, that is, on dextrose-agar plus from 1 to 5 per cent of type-specific anti-pneumococcus rabbit serum. The homologous type pneumococcus colonies growing in the depths of this medium show annular opacities or local precipitin reactions surrounding each colony. The development of these annular opacities is allegedly strictly type specific.

## Clinical Notes, Suggestions and New Instruments

### PRIMARY CARCINOMA OF LIVER WITH SPONTANEOUS RUPTURE

WILLIAM H. MAST, M.D. AND CHARLES W. STREAMER, M.D.  
PUEBLO, COLO.

Review of this case is undertaken because of the infrequent occurrence of spontaneous rupture of a primary carcinoma of the liver, simulating an acute surgical condition of the abdomen.

A white man, aged 34, was admitted to the hospital Oct. 12, 1932 with a diagnosis of ruptured peptic ulcer, made by a physician in a neighboring town. The family history revealed the fact that a maternal grandfather and one brother were supposed to have had congenital syphilis. The past history was negative for serious illness, operations or injuries.

About six years before, the patient had consulted a physician because of gas and constipation. At that time he was told that he had 'liver and heart trouble.' He was given medicine which relieved him so much that he was able to resume his work on the farm. During the past six years he had been fairly comfortable, although he had suffered from flatulence and constipation almost constantly. He had noticed a gradual loss of weight—about 25 pounds (11.3 Kg.) during the past two years. He had never experienced any abdominal pain.

Sept. 10, 1932 the patient drove a tractor, as usual. Next day he had a sudden lancinating pain in the right upper part of the abdomen which was not referred. He was nauseated but did not vomit. He was in mild shock when the family physician was called and with a history of gastro-intestinal disturbance and muscular rigidity of the right upper part of the abdomen, a diagnosis of ruptured peptic ulcer was made.

The temperature on admission was normal, the pulse 130 and very weak. On physical examination the patient was conscious, cooperative, in mild shock and acutely ill. He appeared very anemic and there was a slight icteric tinge of the skin. The face and trunk were covered with many raised tumors, varying in size from a pea to a walnut, some with sessile and others with pedunculated bases. (Similar tumors were present on one brother, the mother and a maternal grandfather and were typical of fibroma molluscum, or Recklinghausen's disease.)

There were a few patches of bronchopneumonia in the right base. The cardiac dullness extended 1 cm. to the left of the midclavicular line. The point of maximum intensity was in the fifth interspace and the heart sounds were of poor quality. There was a loud systolic murmur at the apex and the mid-sternum transmitted toward the left axilla. There was moderate rigidity of the muscles in the right upper abdominal quadrant. The rest of the abdomen was quite distended and voluntary rigidity was present. There was a definite mass palpable in the upper quadrant which extended 13 cm. below the costal margin and 12 cm. to the left of the midsternal line. It was not particularly tender and moved with respiration. The prostate was of normal size and consistency. Bones, joints and reflexes were normal. There was no adenopathy.

The white count was 13,700 with 86 per cent polymorphonuclear cells, 12 per cent of which were immature forms. The hemoglobin was 65 per cent and the erythrocytes numbered 3,120,000. The urine showed two plus albumin and many hyaline and coarsely granular casts. The Wassermann test was not done. A flat plate of the abdomen was negative for free gas under the diaphragm.

Symptomatic treatment was given along with digitalis in large doses. The condition of the patient rapidly grew worse. The pulse ranged between 130 and 170, the temperature rose from normal to 106 and the respirations were increased in proportion. The pneumonia extended and he spit up large quantities of tenacious, purulent sputum. There was occasional vomiting but never any hematemesis. The white count increased to 33,600. The patient became delirious just before death and died on the fourth day. A meningismus developed just before death with marked orthotonus. The Kernig sign was positive, the abdominal reflexes were absent, the knee jerks were diminished, and the Babinski sign was positive bilaterally.

The autopsy revealed an extensive bronchopneumonia of the right base. The heart was slightly enlarged in all diameters

and there were calcareous deposits and narrowing of the orifice of the mitral valve. About 1,500 cc. of hemolyzed blood was found in the abdominal cavity. The liver filled the entire upper part of the abdomen. It was grayish white and the surface was covered with nodules varying in size from a pea to a walnut. At the lower anterior surface of the right lobe there was a deep rent in the capsule and liver substance, about 3.5 cm. long, which apparently accounted for the free blood present. The liver was very friable, the pressure of the fingers on the organ during removal being sufficient to tear it. The weight was 3,360 Gm. (7 pounds). A large circumscribed tumor in the center measured 12 by 10 cm., and numerous smaller ones were seen throughout the substance of the liver.

The gallbladder and ducts were normal in every respect. The stomach, intestine, kidney, bladder and prostate were normal. There was definite adenopathy of the mesenteric glands of the colon and upper part of the jejunum. Both kidneys showed evidence of chronic nephritis.

The microscopic examination of the liver revealed a primary carcinoma of the multiple nodular variety, the nuclei and general structure of the cells giving definite evidence of origin from the liver tissue. The mesenteric glands showed only fibrosis and lymphocytic infiltration.

#### SUMMARY

A man, aged 34, with a history of chronic indigestion, was suddenly taken ill while at work, with symptoms simulating an acute surgical condition of the abdomen. The patient was not operated on and rapidly became worse, dying within four days. Necropsy revealed a primary carcinoma of the liver, which had ruptured spontaneously, filling the abdomen with 1½ quarts of dark blood.

#### COMMENT

This case is presented because of the unusual occurrence of spontaneous rupture of primary carcinoma of the liver with symptoms of an acute condition of the abdomen.

It is interesting to conjecture that there may have been a tendency to tumor growth, owing to the presence of fibroma molluscum over the trunk and face. A diagnosis of ruptured peptic ulcer was easily ruled out after the initial involuntary rigidity disappeared and the liver became palpable. Later, the diagnosis of chronic passive congestion of the liver or some new growth in this organ was considered. The fact that the patient had been working hard for a number of years with no symptoms of cardiac decompensation would tend to rule out the former. We were unable to account for the abdominal symptoms until necropsy was performed. It seems quite plausible that the jar from the tractor which the patient was driving was sufficient to cause the rupture found in the liver.

402 Colorado Building

### UREA CRYSTALS IN CANCER

WILLIAM M. MILLAR, M.D., CINCINNATI

The peculiarly penetrating fetor of a sloughing cancer is one of the horrible aspects of this disease. For the past year at the Tumor Clinic of the Cincinnati General Hospital, urea crystals<sup>1</sup> have been advocated and prescribed in such cases. If they are packed into the wound the odor will be stopped to a great extent. Although they dissolve in a few minutes, the offensive character of the ulcer becomes less with each application. The crystals are cheap; they possess a considerable antiseptic value, and there is no fear of a systemic reaction. The danger of burning the surrounding skin which is considerable when the average dispensary patient attempts to use surgical solution of chlorinated soda at home, is avoided. There is one objection. After several days treatment an occasional patient will complain of pain in the wound after packing. This can readily be relieved by morphine or other narcotics, a therapeutic measure which is not as drastic as it sounds, for by this time the terminal stage has been reached in the greater proportion of cases and the patients have been taking opiates for the relief of the pain of the cancer itself. This being the case there is no reason why the strength or frequency of the narcotic cannot be adequately increased.

<sup>1</sup>From the Department of Surgery, College of Medicine of the University of Cincinnati.

<sup>2</sup>Suggested by Dr. John Foulger of the Department of Pharmacology, University of Cincinnati College of Medicine.

## Council on Pharmacy and Chemistry

### NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH Secretary

#### DEXTROSE (See New and Nonofficial Remedies, 1933, p 267)

The following dosage form has been accepted

**Dextrose Ringer's Stock Solution Five Times Concentrated** Abbott. A solution containing 25 per cent by weight of dextrose U S P (equivalent to 28.1 Gm.  $C_6H_{12}O_6 \cdot H_2O$  in 100 cc.) in concentrated Ringer's solution (five times strength). When one volume is diluted with water to exactly five volumes the resulting solution contains 5 per cent by weight of dextrose U S P (equivalent to 56 Gm.  $C_6H_{12}O_6 \cdot H_2O$  in 1000 cc.) in a Ringer's solution containing in 1000 cc. of aqueous solution sodium chloride 7.0 Gm. potassium chloride 0.3 Gm. anhydrous calcium chloride 0.25 Gm. The product is marketed in ampules of 100 cc.

**Actions and Uses**—This product (after dilution with four volumes of freshly distilled water which provides a somewhat hypertonic solution) is proposed for continuous venoclysis over prolonged periods. It is intended as a source of dextrose for the maintenance of nutrition and of ions in balanced ratio for the maintenance of the salt equilibrium of the blood stream.

**Dosage**—According to the needs of the individual case. Generally 500 cc. per hour may be administered until the blood pressure is satisfactory. The flow is then diminished to 100 cc. per hour which may be continued for several days if necessary. When given for shock in the absence of low blood pressure the rate of flow should not exceed 200 cc. per hour at any time.

Prepared by the Abbott Laboratories North Chicago Ill. No U S patent or trademark.

Dextrose Ringer's stock solution five times concentrated Abbott occurs as a clear colorless solution possessing a slightly saline taste. The specific gravity is from 1.128 to 1.120 at 20 C.

Add a few drops of the solution to 5 cc. of hot alkaline cupric tartrate test solution; a copious red precipitate of cuprous oxide is formed. Dilute 3 cc. of solution to 10 cc. and add one drop of iodine solution; the liquid is colored yellow (soluble starch negative). 2 cc. of the solution diluted to 10 cc. conforms to the U S P  $\chi$  test for heavy metals. 5 cc. of the solution conforms to the U S P  $\chi$  test for arsenic.

To 4 cc. of Dextrose Ringer's stock solution five times concentrated Abbott in a suitable test tube add sufficient water to make 9 cc. of solution; add 1 cc. of freshly prepared sodium cobaltic nitrite solution and mix thoroughly. Similarly treat in exactly similar test tubes portions of a standard aqueous solution containing 15 Gm. of potassium chloride (previously dried) in 1000 cc. the turbidity produced by 4 cc. of Dextrose Ringer's stock solution five times concentrated Abbott at the end of ten minutes is less than that produced by 5 cc. and greater than that produced by 4 cc. of the standard solution (limit of potassium  $[K^{++}]$ ).

Transfer 1 cc. of Dextrose Ringer's stock solution five times concentrated Abbott to a Nessler tube; add 0.5 cc. of diluted acetic acid, 40 cc. of water and 5 cc. of ammonium oxalate solution. Dilute at once to 50 cc. and mix thoroughly. Similarly treat portions of a standard solution formed by dissolving 0.287 Gm. of precipitated calcium carbonate (previously dried to constant weight at 200 C) in from 10 to 15 cc. of water containing 3 cc. of acetic acid and diluted to 250 cc. the turbidity produced by 1 cc. of the Dextrose Ringer's stock solution five times concentrated Abbott at the expiration of fifteen minutes is less than that produced by 1.25 cc. and greater than that produced by 1 cc. of the standard solution (limit of calcium  $[Ca^{++}]$ ).

The dextrose content as determined by the optical rotation method of the U S P  $\chi$  is not more than 26.82 Gm. anhydrous dextrose (29.5 Gm.  $C_6H_{12}O_6 \cdot H_2O$ ) nor less than 24.26 Gm. anhydrous dextrose (26.7 Gm.  $C_6H_{12}O_6 \cdot H_2O$ ) per hundred cubic centimeters. Treat 5 cc. of Dextrose Ringer's stock solution five times concentrated Abbott with an excess of sulphuric acid; evaporate to dryness and ignite to constant weight at 750 C. the weight of ash obtained is not more than 0.242 Gm. nor less than 0.219 Gm.

Transfer 20 cc. of Dextrose Ringer's stock solution five times concentrated Abbott to a 100 cc. volumetric flask; add water dilute to the mark and mix thoroughly. Transfer 10 cc. of this solution to a 400 cc. beaker; add 50 cc. of water and 4 cc. of diluted nitric acid; dilute to 200 cc. add 15 cc. of silver nitrate solution heat to boiling and allow to stand until the precipitate is granular. Filter onto a weighed Gooch crucible previously heated to 140-150 C. wash the precipitate well with hot water, dry to constant weight at 140-150 C. the chloride  $(Cl^-)$  calculated from the silver chloride weighed is not more than 2.1 per cent nor less than 1.9 per cent of weight of sample of Dextrose Ringer's stock solution five times concentrated Abbott.

#### DEXTROSE (See New and Nonofficial Remedies, 1933, p 267, THE JOURNAL, Feb 25, 1933, p-574)

The following dosage forms have been accepted

**Sterile 24% Dextrose Solution in Vacoliter Container** Each 100 cc. contains dextrose U S P 2.62 Gm.  
Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corporation Chicago eastern distributor)

**Sterile 7½% Dextrose Solution in Vacoliter Container** Each 100 cc. contains dextrose U S P 7.85 Gm.

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corporation Chicago, eastern distributor)

**Sterile 20% Dextrose Solution in Vacoliter Container** Each 100 cc. contains dextrose U S P 21 Gm.

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corporation Chicago eastern distributor)

**Sterile 25% Dextrose Solution in Vacoliter Container** Each 100 cc. contains dextrose U S P 26.25 Gm.

Prepared by Don Baxter Intravenous Products Corporation, Chicago (American Hospital Supply Corporation Chicago eastern distributor)

#### CHLORBUTANOL (See New and Nonofficial Remedies, 1933, p 137)

**Chlorbutanol (Hydrous)-Merck**—A brand of chlorbutanol-N N R. containing one molecule of water in two of chlorbutanol. This product is used in the preparation of aqueous solutions.

Manufactured by Merck & Co. Inc. Rahway N J. No U S patent or trademark.

**Chlorbutanol (Anhydrous)-Merck**—A brand of chlorbutanol-N N R. For use in the preparation of oil solutions.

Manufactured by Merck & Co. Inc. Rahway N J. No U S patent or trademark.

#### NEOCINCHOPHEN (See New and Nonofficial Remedies, 1933, p 141)

**Neocinchophen-Merck**—A brand of neocinchophen-N N R.

Manufactured by Merck & Co. Inc. Rahway N J. No U S patent or trademark.

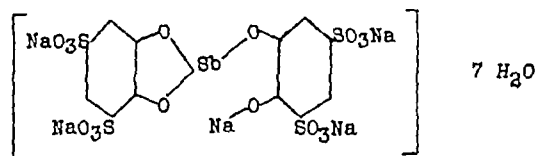
### PRELIMINARY REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING PRELIMINARY REPORT

PAUL NICHOLAS LEECH Secretary

#### FUADIN

Fuadin is a complex trivalent antimony compound (sodium antimony<sup>III</sup> biscatechol-disulfonate of sodium), distributed by the Winthrop Chemical Company, claimed to have the following structural formula



It is proposed for use in the treatment of bilharziasis and granuloma inguinale in place of antimony and potassium tartrate. It is marketed in the form of a solution, in ampules containing about 63 per cent of the drug and representing about 85 mg of antimony per cubic centimeter. It is administered in doses of from 1.5 to 5 cc. until a total of from 40 to 45 cc. has been given.

When the paper by Williamson, Anderson Kimbrough and Dodson on 'The Specific Effect of Fouadin' (Fuadin) on Granuloma Inguinale' (this issue, p 1671) was submitted to THE JOURNAL, the editor informed the authors that the product must be submitted to the Council before the paper could be accepted for publication. After some delay, the Winthrop Chemical Company made formal presentation of the product for the Council's consideration.

**Name**—The Council's Committee on Nomenclature considered the name Fuadin (named after Fuad I, king of Egypt because of his interest in the product). The committee felt that the name is regrettable, since it introduces the consideration of patronage, which is not desirable in science, and besides gives no inkling of the chemical nature of the product. However, it was not found technically in conflict with the Council's rules and, since the firm for practical reasons hesitates to give it up, the Council voted to recognize it. The firm stated its intention of using the scientific (chemical) name on the label in conformance with the Council's rules.

**Therapeutic Usefulness**—Fuadin was synthesized by H. Schmidt of Elberfeld for use in the treatment of bilharziasis. The pharmacology of this substance has to some extent been elucidated by Hammuda of Cairo and Weese of Elberfeld, who determined the limits of toxicity, these investigators, it is stated, found the compound safe in therapeutic dosage. The claim is advanced that Fuadin has practically no action on the vagus

(although slowing of the pulse is said to occur almost without exception in the therapeutic use) and that it is excreted chiefly in the urine, only slightly in the feces and not at all by the skin. Hassan determined the excretion during clinical administration. No data on toxicity and excretion were found in the published literature. Such data should be made available as soon as possible.

Khalil and his co-workers<sup>1</sup> have treated a large series of cases of bilharziasis with Fuadin with reported excellent results. Fuadin is said by these workers to be superior to antimony and potassium tartrate ("tartar emetic") in that it may be administered intramuscularly, side actions are less pronounced, and the course of treatment may be shortened.

Since 1913, granuloma inguinale has been recognized as an endemic disease in the United States; previous to then it had been looked on as chronic chancroids or tuberculosis of the genitalia. The disease is now known to be rather widely prevalent; it was studied in Brazil by Aragão and Vianna, it occurs in the West Indies and is quite common in the Dutch East Indies.

Fox<sup>2</sup> and Cole, Miskjian and Rauschkolb<sup>3</sup> have published extensive reviews on the subject, including case reports. The disease appears to be chiefly venereal, characterized by chronic granulomatous ulceration of the genitalia, occasionally with contact lesions on other parts of the body. Tissue smears stained with Giemsa's stain almost invariably reveal the presence of the so-called Donovan bodies, which are thought possibly to bear an etiologic relationship to the disease. McIntosh<sup>4</sup> has suggested the "formaldehyde-gel" test as a diagnostic measure, while this is not specific, it is positive in a large proportion of cases.

In the past granuloma inguinale has been treated with antimony compounds chiefly in the form of antimony and potassium tartrate in 1 per cent solution intravenously, but only with moderate success. The disease tends to recur, often after the lesions are apparently entirely healed, smears made from biopsy material taken from the scar tissue may still reveal Donovan bodies.

In the work of Williamson and his co-workers, seven cases treated with Fuadin are reported in detail and seven others are mentioned, four of the former had previously been treated with antimony and potassium tartrate and one probably had been so treated all with poor results. In all seven cases the lesions were healed over after ten to twelve injections of Fuadin. The authors pronounced these cases cured. Unfortunately, no note is made as to the finding of Donovan bodies either before treatment was started or after healing apparently had occurred, the "formaldehyde gel" test of McIntosh similarly is not mentioned. These results are therefore open to criticism, it is not improbable that Donovan bodies may be found in the scars of these healed lesions, and these patients had not been followed for a sufficiently long time to rule out the possibility of relapse. It is unfortunate that more complete data apparently were not obtained in this study.

The authors compare Fuadin with antimony and potassium tartrate. Fuadin is described as a 'safe and rapid specific' although some of the patients receiving the injections are said to have had headache, nausea and vomiting; antimony and potassium tartrate is considerably disparaged—the referee believes undeservedly. The occurrence of the aforementioned and other symptoms, such as pain in the bones, which the authors have also observed indicates that the administered amount of antimony is as large as may safely be used. Probably several thousand injections of antimony and potassium tartrate have been administered in the clinic of the Council's referee. He reported that occasionally a little coughing occurs and, once in a while, emesis when properly given intravenously, "abscess and sloughing" never supervene, the referee has never seen fainting after injection. The authors describe, as late effects of antimony and potassium tartrate 'fever, continuous vomiting, jaundice and sudden death' aside from one

or two cases of mild icterus, no untoward late effects have been observed by the referee. He considers the comparison unfair. The development of white scars in the healing of the lesions is also mentioned, this is not uncommon in any inflammatory reaction in the skin of the Negro in which the lesion is deep enough to destroy the pigment layer.

No information was available to the Council's referee as to the effects of Fuadin on the kidneys. As antimony compounds are known to be renal irritants, caution is indicated until this phase of the problem has been properly elucidated. The use of Fuadin in granuloma inguinale is still in the experimental stage, the data presented in the paper of Williamson et al. are incomplete and must be supplemented by more complete reports before the therapeutic usefulness of Fuadin may be considered to be established.

As a result of its consideration of Fuadin, the Council held that the use of this drug in granuloma inguinale is still in the experimental state and that great caution is necessary in its use. The Council therefore postponed further consideration of the product until confirmatory evidence of its therapeutic value becomes available. If such evidence becomes available, the A. M. A. Chemical Laboratory will be asked to investigate the product with a view to elaborating standards. In order that Fuadin may be introduced for experimental use by qualified investigators, the Council authorized publication of this preliminary report in the same issue of THE JOURNAL in which the report of Williamson and his associates appears.

## REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS  
PAUL NICHOLAS LEECH, Secretary

### PANCRESAL TABLETS NOT ACCEPTABLE FOR N. N. R.

Pancresal Tablets, according to the label on specimens received from the distributor, Pancresal Sales Company, Inc., contain "the active principle of the pancreas combined with asparagin and activating Elektrolytes." Each tablet is stated to contain sodium bicarbonate, 0.124 Gm, dekamethylenediguanidin carbonate, 0.006 Gm, Asparagin, 0.124 Gm, "Pan cracym," 0.156 Gm, and "Mineral-Vitamine," 0.590 Gm. Subsequently a letter was received from the manufacturer, Dr. Richard Weiss, Fabrik Pharmazeutischer Präparate G. M. B. H., Berlin, Germany, stating that the tablets for the United States market had the following composition: sodium bicarbonate, 0.224 Gm, dekamethylenediguanidin carbonate, 0.006 Gm, Asparagin, 0.075 Gm, "Pancracym," 0.125 Gm, and "Mineral-Vitamine," 0.250 Gm. The "Dekamethylenediguanidin carbonate" is declared to be similar to "Synthalin" which is stated to be dekamethylenediguanidin hydrochloride but to be superior to it, no convincing evidence for the assertion is offered. The "Mineral-Vitamine" is stated to be composed of dried yeast, calcium lactate, dicalcium phosphate, sodium sulphate, magnesium citrate, potassium iodide and powdered thyroid. The "Pancracym" is stated to be prepared from pancreas glands by extracting them with acetone, acetone and ether and ether, and the residue dried and powdered. No evidence for the efficacy of this component was offered.

The effective agent in Pancresal Tablets probably is the dekamethylenediguanidin carbonate. It is unlikely that the pancreatic extract which is contained in the tablets is of any significant value, many attempts have been made to isolate a pancreatic extract that is efficacious when administered by mouth, but so far these attempts have not been successful. The scientific data that are presented by two advertising circulars for Pancresal Tablets are extremely inadequate and make it probable that the preparation has no value other than that imparted by the content of dekamethylenediguanidin carbonate. Insulin substitutes of no greater potency than that claimed for Pancresal Tablets are without practical value. They accomplish almost nothing and are harmful because they are an invitation to diabetic patients to depend on this inadequate therapy in place of an adequate and sane insulin therapy.

Pancresal Tablets are unacceptable for New and Nonofficial Remedies because they present an unscientific complex mixture.

1 Khalil M. Nazmi, M. Peter F. M. el Din, M. Salah and el Betash M. H. *Deutsche med. Wchnschr.* 55: 1125 (July 5) 1929.

2 Fox, Howard. *Granuloma Inguinale, Its Occurrence in the United States*. J. A. M. A. 87: 1785 (Nov. 27) 1926.

3 Cole, Miskjian and Rauschkolb. *Dermat. Ztschr.* 53: 127 (April) 1928.

4 McIntosh, J. A. *The Etiology of Granuloma Inguinale*. J. A. M. A. 87: 996 (Sept. 25) 1926. *Study of Etiology of Granuloma Inguinale*. J. Tennessee M. A. 19: 190 (Nov.) 1926.

of indefinite composition which is marketed with unwarranted claims under a noninforming therapeutically suggestive name and in a way to lead the diabetic patient to place false dependence on this form of inadequate therapy

The foregoing statement of the Council's action on Pancresal Tablets was transmitted to the Pancresal Sales Co., Inc. Since no reply was received from the firm, a letter was written after five months concerning the failure to reply. Subsequently a letter was received through the firm from Dr. Richard Weiss of Berlin. This letter was examined by the Council's referee and found to contain nothing which justified any essential change in the Council's statement concerning Pancresal Tablets.

Subsequent to the first consideration of Pancresal Tablets, inquiries were received by the secretary of the Council concerning the testimonials from physicians appearing in advertisements for the product. Inquiries were sent to the two physicians named in the advertisements concerned, asking whether the testimonials were authentic and whether at the time of receiving the letter the physicians still subscribed to the statements. The first physician replied in part:

I believe Pancresal has no merits that it is a fake. This Dr. Marlow who observed this case in my wards had been warned that diet alone will do all this without Pancresal.

Furthermore I am not the head of the diabetic clinic of the Unity Hospital and am not a lecturer at the Long Island College Hospital.

I would greatly appreciate if you will let me know the date of receipt of the Pancresal advertisement for I warned them on October 3, 1932, that I would take legal action against them if they used my name in the future.

The second physician replied:

The statement I made about the Pancresal Tablets was on April 12, 1932. At that time one of their detail men gave me samples of Pancresal which I gave to two of my patients. As I stated there was a reduction in the blood and urine sugar but I was not sure whether diet had anything to do with it. I did not receive any more tablets so I could not say anything definite.

"At present the issuance of the statement does not meet with my approval. I have just recently found out that they are using my indefinite statement in their advertisements. The only reason I wrote the statement was to get more samples."

From these replies it appears that the statements of the physicians have not even the value of uncontrolled testimonials in favor of Pancresal Tablets.

The Council voted to reaffirm the rejection of Pancresal Tablets for the reasons given.

### IODOMIN NOT ACCEPTABLE FOR N N R

Iodomine is a product of the American Bio-Chemical Laboratories, Inc., recommended in the treatment of "catarrhal rhinitis, otitis media, catarrhalis, bronchial catarrh" and other disorders of the ear, nose and throat. The American Bio-Chemical Laboratories, Inc., has exploited in this country a number of foreign products, among them Thymophycin, which was found unacceptable for inclusion in N N R, and has been the subject of several critical comments in *THE JOURNAL (J A M A)* 94:1164 [April 12] 1930, 96:359 [Jan 31], 860 [March 14] 1931. Propeptans, which the Council also declared unacceptable for N N R, Disulphamin, a preparation advertised with extravagant therapeutic claims under a high sounding but meaningless chemical designation (*J A M A* 95:1690 [Nov 29] 1930), and Kephrene, which is now before the Council.

In an advertising circular Iodomine is said to be "a five per cent sodium iodide solution containing traces of free iodine." It is furnished in ampules of 1 cc., intended for subcutaneous injection, to be given "on alternate days or twice weekly" for as many as twelve doses. Infants may receive 0.5 cc.

The following are some of the claims made for this preparation:

"Its pure iodine content is exceedingly low, precluding the possibility of iodism or other untoward reactions. Iodomine is contraindicated only in iodine anaphylactic conditions. The therapeutic and palliative value of Iodomine is predicated upon the presence of a distinct catarrhal condition of the ear, nose or throat. Its primary indications are therefore: Acute Catarrhal Rhinitis, Otitis Media, Catarrhalis, Acute Bronchial Catarrh, also recommended as a nonspecific palliative measure in Hydrorrhea and Vasomotor Rhinitis. Coryza will as a rule yield to one or two treatments. Allergic Rhinitis rarely yields to less than six injections of Iodomine and may require as many as twelve."

A preliminary examination by the A M A Chemical Laboratory of the contents of Iodomine ampules purchased in the open market indicated the presence, in 1 cc. of the solution, of 1.2 mg. sodium iodide and 0.7 mg. free iodine, the total solids remaining after evaporation at 95°C. approximated the iodide content. It is concluded from this examination that, instead of being a 5 per cent solution of sodium iodide with a trace of free iodine, Iodomine is a solution containing about 0.12 per cent of sodium iodide and about 0.07 per cent of free iodine. These observations seem to show that the advertising contains gross misrepresentation of the amounts of active substance. It is particularly to be noted that the firm avoided conflict with the Food and Drugs Act by omitting mention of the iodide or iodine content on the carton and ampules.

Any aqueous solution of sodium iodide will, on standing, develop traces of free iodine, the impression conveyed that Iodomine represents an advance in the preparation of iodide solutions is unwarranted. It is said to be somewhat irritant on injection, this is not surprising, in view of the hypotonicity and elemental iodine content of the specimen examined.

It is claimed in the advertising circular that the "exceedingly low" pure iodine content precludes the possibility of iodism. This appears to suggest that the composition of Iodomine is such as to diminish the incidence of untoward reactions below that which may occur with similar dosage of ordinary sodium iodide. Naturally the incidence of toxic responses would be lower with a solution as dilute as the examination indicated Iodomine to be, than with similar use of an actual 5 per cent solution (the concentration claimed—but not found) of sodium iodide. On the basis of the determination quoted, the total iodine dosage administered in Iodomine would appear to be about 17 mg., given on alternate days or twice a week. This quantity of iodine, whether elemental or ionic, would not cause iodism and, in fact, could hardly have any important therapeutic effect. The only well established consequence of such dosage is a gradual storage of iodine in the thyroid gland.

Periodically, the parenteral administration of iodine compounds, simple or complex, is reintroduced into therapeutics, usually with fantastic claims. The fact that the inorganic iodides, particularly the sodium and potassium salts, are readily absorbed from the intestinal tract and can produce all the known iodide effects when administered by mouth (except the more severe anaphylactoid effects of intravenous injection) seems to be overlooked by the popularizers of these remedies.

The parenteral use of small doses of iodine in the conditions for which Iodomine is recommended appears to have originated with H. Sternberg of Vienna (*Monatsschr. f. Ohrenh.* 64:401 [April] 1930). His preparation, manufactured by Chemosan, A. G., was introduced in Europe under the name 'Rhinostop'; it was said to have the same composition (5 per cent sodium iodide with a trace of free iodine) as that claimed for Iodomine. Sternberg inclined to the opinion that the free iodine administered was the chief factor in the therapeutic effect, even though the dosage amounted to only a few hundredths of a milligram, the evidence for this is far from convincing. The only American literature on the use of Iodomine available to the Council is a report (Rosenberg, *J. Laryngoscope* 42:883 [Nov.] 1932), without case histories, in which the indicated results are no better than other workers have claimed for the oral administration of sodium or potassium iodide or for other treatments. In fact, assuming that the Iodomine used by the author was similar to that examined by the A M A Chemical Laboratory, the small doses administered could hardly have acted as more than a placebo.

This apparently is another example of the exploitation of a well known drug under a proprietary name with misrepresentation of the content of active substance. A variety of unsubstantiated claims are put forth which seem to convey the impression that the manufacturer by some special process has endowed this simple mixture with exceptional therapeutic virtue.

The Council declared Iodomine unacceptable for inclusion in N N R because it is apparently a simple solution of two well known therapeutic substances (rules 1 and 2), because it is marketed under an uninformative proprietary name (rule 8) with unwarranted and extravagant therapeutic claims (rule 6), and because it is an unscientific preparation apparently containing active ingredients in ineffective quantities and in irrational proportion (rule 10).

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

#### CALUMET BAKING POWDER COMBINATION TYPE

**Manufacturer**—Calumet Baking Powder Company, Inc., Chicago

**Description**—Baking powder containing corn starch, sodium bicarbonate, sodium aluminum sulphate, calcium acid phosphate and 0.15 per cent dried egg white.

**Manufacture**—The raw materials and ingredients used are purchased under definite specifications for composition, purity, granulation, etc., all of which are checked analytically by the company's laboratories to assure conformity with specifications and food law requirements.

Definite quantities of the ingredients are carefully weighed out and thoroughly mixed in mechanical mixers; the mixture is examined in the laboratory to assure proper mixing and tested for total and available carbon dioxide. A test baking check is made on each individual batch. The baking powder is automatically packed in tins.

Analysis (submitted by manufacturer) —	per cent
Total carbon dioxide (CO <sub>2</sub> )	14.7
Residual CO <sub>2</sub>	0.5
Available CO <sub>2</sub> under baking conditions	14.1
Phosphorus (P)	3.7
Aluminum (Al)	2.2
Calcium (Ca)	2.2

**Claims of Manufacturer**—For use in baking and cooking recipes calling for baking powder. The product and ingredients conform to the respective United States Department of Agriculture definition and standard. The two acid reacting ingredients for liberation of the leavening gas, because of their different solubilities produce a "double leavening action" in the dough. The first action releases a portion of the leavening gas in the cold dough; the second releases the remaining gas in the heated dough in the oven.

#### LIGHT'S BEST OVEN PERFECT FLOUR (BLEACHED)

**Manufacturer**—Light Grain and Milling Company, Liberal, Kan.

**Description**—Hard winter wheat patent flour bleached.

**Manufacture**—Selected hard winter wheat is cleaned, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18 1932 p 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per 196 pounds).

**Claims of Manufacturer**—For baking bread, biscuits and pastries.

#### H G F STORES CRYSTAL WHITE SYRUP (85 PER CENT CORN AND 15 PER CENT ROCK CANDY SYRUPS)

##### SUMMER GIRL BRAND CRYSTAL WHITE SYRUP

(85 PER CENT CORN AND 15 PER CENT ROCK CANDY SYRUPS)

**Packer**—D B Scully Syrup Company, Chicago

**Distributor**—The H D Lee Mercantile Company, Kansas City and Salina, Kan., and Waterbury, Conn.

**Description**—Table syrups, corn syrup base (85 per cent) with rock candy syrup (15 per cent), the same as Crystal White Syrup (85 Per Cent Corn and 15 Per Cent Rock Candy Syrups) (THE JOURNAL, April 15, 1933, p 1174).

#### THE NEW PETTIJOHN'S ROLLED WHEAT WITH ALL THE BRAN

**Manufacturer**—The Quaker Oats Company, Chicago

**Description**—Flaked cut whole wheat.

**Manufacture**—Selected soft wheat is cleaned of weed seed, chaff and other extraneous matter and scoured; the individual wheat groats are machine cut into several pieces. The cut wheat is steamed, flaked between steel rolls and packed in cartons.

Analysis (submitted by manufacturer) —	per cent
Moisture	11.9
Ash	1.6
Fat (ether extraction method)	2.1
Protein (N × 5.7)	11.8
Crude fiber	2.2
Carbohydrates other than crude fiber (by difference)	69.2

**Calories**—35 per gram, 99 per ounce.

**Claims of Manufacturer**—A whole wheat breakfast cereal.

#### "SWEET TOOTH" BUCKWHEAT PANCAKE FLOUR

**Manufacturer**—Black Bros Flour Mills, Beatrice, Neb.

**Description**—Self-rising buckwheat pancake flour containing buckwheat flour, wheat "clear" flour, white corn flour, calcium acid phosphate, sodium bicarbonate, salt, corn sugar and powdered skim milk.

**Manufacture**—The ingredients are separately weighed, mixed in a batch mixer and automatically packed in paper bags.

Analysis (submitted by manufacturer) —	per cent
Moisture	11.1
Ash	6.4
Fat (ether extraction method)	2.7
Protein (N × 6.25)	11.8
Reducing sugars as dextrose	0.6
Sucrose (copper reduction method)	1.2
Crude fiber	1.6
Carbohydrates other than crude fiber (by difference)	66.4

**Calories**—34 per gram, 97 per ounce.

**Claims of Manufacturer**—For making pancakes.

- MADICO MALTOSE-DEXTRIN (PLAIN) ("A")
- MADICO MALTOSE-DEXTRIN WITH 2 PER CENT OF SODIUM CHLORIDE ("B")
- MADICO MALTOSE-DEXTRIN ("C") WITH POTASSIUM BICARBONATE 3 PER CENT

**Manufacturer**—Malt-Diastase Company, Brooklyn.

**Description**—(a) Canned spray dried extract of malted barley and starch infusion, contains essentially maltose and dextrins.

(b) Same as (a) with 2 per cent added sodium chloride.

(c) Same as (a) with 3 per cent added potassium bicarbonate.

**Manufacture**—(a) Diastatic barley malt of known diastatic power is crushed and admixed with gelatinized starch and water. The malt diastase is permitted to convert the starch at a definite temperature until a desired ratio of maltose and dextrins is obtained. The mixture is heated to boiling to stop diastatic action and coagulate precipitated protein and filtered to remove coagulated protein fat and insoluble material. The filtrate is concentrated in "vacuum" decolorized with activated carbon spray dried and automatically packed in tins.

Analysis (submitted by manufacturer) —	per cent
(a) Moisture	2.2
Total solids	97.8
Ash	0.8
Fat (Roese-Gottlieb method)	0.04
Protein (N × 6.25)	1.2
Reducing sugars as anhydrous maltose	53.7
Dextrins (by difference)	40.9
Acidity as lactic acid	0.2
Carbohydrates (by difference)	95.6

(b) and (c) Same as (a) excepting as changed by addition of 2 per cent sodium chloride and 3 per cent potassium bicarbonate, respectively.

**Calories**—(a) 39 per gram, 111 per ounce.

(b) 38 per gram, 108 per ounce.

(c) 38 per gram, 108 per ounce.

**Claims of Manufacturer**—Carbohydrate supplements for the general diet of infants and for invalids.

POLAND WATER  
NATURAL SPRING WATER

*Distributor*—Hiram Ricker and Sons, Inc., South Poland Maine

*Description*—Spring water of very low mineral content and almost free from bacteria

*Collection and Bottling*—The Poland Spring is located in Androscoggin County, Maine, north of Portland. The immediate surroundings of the spring are red granite and are well cared for and sanitary. The temperature of the water, 5 C is uniform throughout the entire year. The spring outlet is within a large granite building and is covered with a glass case to prevent contamination. The water flows by gravity to granite storage tanks and to the bottling plant through quartz, glass and silver pipes. The tanks are glass covered and all vents are metal gauze covered. The water is bottled by automatic filling and capping machines. The air in the bottling room is filtered. The bottles before use are immersed in strong alkali solution for from one and one-half to three hours and are carefully washed, rinsed, steamed, rinsed steamed again and filled just as soon as cooled. The purity of Poland Water is regularly checked both chemically and bacteriologically.

*Analysis* (submitted by manufacturer) —

Sediment	None
Turbidity	None
Color	5.0
Residue on evaporation	Parts per million
Ammonia nitrogen	110
Free	0.01
Albuminoid	0.01
Nitrogen as	
Nitrites	0.002
Nitrates	0.36
Oxygen consumed	0.1
Chlorine	6.0
Hardness	5.8
Free carbon dioxide (CO <sub>2</sub> )	12.0
Silicon (Si)	8.1
Iron (Fe)	0.1
Aluminum (Al)	0.5
Calcium (Ca)	9.7
Copper	none
Lead	none
Magnesium (Mg)	1.7
Sodium (Na)	5.1
Potassium (K)	1.5
Chlorine (Cl)	5.0
Sulphur (S)	3.2
Phosphorus (P)	trace

*Micro Organisms* (submitted by manufacturer) —

Total bacteria per cc.	
At 20 C	11
At 37.5 C	1
Acid colonies per cc	0
Presumptive test for B coli in 10 cc	Negative
Confirmative test for B coli	Negative
Bacillus coli in 50 cc.	None

*Claims of Manufacturer*—A pure spring water of low mineral content and almost free of bacteria

TAYLOR'S PRIDE LOAF  
TAYLOR'S SANDWICH BREAD

*Manufacturer*—Taylor's Bakery, Columbia, S C

*Description*—White breads made by the sponge dough method (method described in THE JOURNAL, March 5, 1932 page 817) prepared from patent flour, water, sucrose, sweetened condensed milk, lard, salt, yeast, malt syrup and a yeast food containing calcium sulphate ammonium chloride, sodium chloride and potassium bromate

*Claims of Manufacturer*—Conforms to the United States Department of Agriculture definition and standard for white bread

FAIRWAY WHITE LABEL BRAND  
TOMATO JUICE

*Distributor*—Twin City Wholesale Grocery Company, St. Paul, Minn., Minneapolis Minn., and Fargo, N D

*Packer*—The Loudon Packing Company, Terre Haute Ind

*Description*—Pasteurized tomato juice with a small amount of added salt, retains in high degree the vitamin content of the raw juice the same as Loudon Brand Tomato Juice (THE JOURNAL, June 25 1932, p 2289)

## WHITE HOUSE NATURAL BROWN RICE

*Manufacturer*—Standard Rice Company, Inc, Houston, Texas

*Description*—Brown rice with the natural bran

*Manufacture*—The rough rice from the fields is passed over "shakers" to separate out foreign material and dehulled between shelling stones. The rice groat is separated from the hulls in special machines, air cleaned, heat or electrically treated for destruction of insect life and automatically packed in wax-paper wrapped cartons

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	13.0
Ash	1.1
Fat (ether extraction method)	2.2
Protein (N X 5.95)	6.3
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	76.5

*Calories*—35 per gram 100 per ounce

*Vitamins*—A fair source of vitamins A and G and a good source of B

*Claims of Manufacturer*—Contains the bran and nutritional values of natural brown rice

ROTH'S WHITE HEARTH BREAD  
(POPPY SEED TOPPING)

*Manufacturer*—The A Roth Baking Company Newport, Ky

*Description*—A white hearth bread with poppy seed topping made by the sponge dough method (method described in THE JOURNAL, March 5, 1932 p 817), prepared from patent flour, water sucrose yeast, salt, malt syrup lard and a yeast food containing calcium sulphate ammonium chloride, sodium chloride and potassium bromate

*Claims of Manufacturer*—Conforms to the United States Department of Agriculture definition and standard for white bread

FAIRWAY WHITE LABEL EVAPORATED  
MILK (STERILIZED)

*Distributor*—Twin City Wholesale Grocery Company, St. Paul

*Packer*—The Oatman Condensed Milk Company, Dundee, Ill

*Description*—This canned unsweetened evaporated milk is the same product as Oatman's Brand Evaporated Milk (THE JOURNAL, April 16, 1932, p 1376)

## "SWEET TOOTH" PATENT FLOUR BLEACHED

*Manufacturer*—Black Bros Flour Mills Beatrice Neb

*Description*—A moderately hard winter wheat patent flour bleached

*Manufacture*—Selected dark Turkey red and hard winter wheat are cleaned, washed scoured and milled by essentially the same procedure as described in THE JOURNAL June 18 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-ninth ounce per barrel)

*Claims of Manufacturer*—For bread baking

## WHITE HOUSE BRAND CORN FLAKES

*Manufacturer*—Standard Rice Company, Inc, Houston Texas

*Description*—Cooked flaked and toasted corn (free of germ and bran) flavored with sugar, salt and malt syrup

*Manufacture*—Corn hominy grits admixed with the formula quantities of sucrose, salt malt syrup and water are placed in sealed steel drums and steam cooked. The cooked mass is cooled broken into separate granules and dried to a moisture content suitable for their flaking between steel rolls. The flaked corn is toasted in revolving ovens is passed over screens to remove fine material and packed in wax-paper wrapped cartons

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	7.3
Ash	3.4
Fat (ether extraction method)	0.5
Protein (N X 6.25)	9.0
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	79.4

*Calories*—36 per gram 102 per ounce.

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SATURDAY, MAY 27, 1933

## PHYSICAL UNFITNESS IN STUDENTS

In his essay on the Prolongation of Life, Metchnikoff wrote, many years ago "If hygiene was able to prolong life when it was little developed, as was the case until recently, we may well believe that, with our greater knowledge of today, a much better result will be obtained." This expectation has in part been realized, indeed, it has been said that to hygiene belongs without doubt the place of honor in modern medicine. Public hygiene, or preventive medicine, as it is more frequently designated, represents a sort of offensive warfare against the noxious agents of our environment. Governmental activities protect mankind in the mass at every turn. They are concerned with pure air, pure water, pure food and the menace of epidemic disease. It may be doubted, however, whether personal hygiene, the defensive branch of public health service, has made equally notable progress. Do men exercise adequately the powers that may be developed for the strengthening of the individual? Is the hygiene of nutrition and of activity, including the perfect balance of work, play and sleep, appropriately cultivated?

The skepticism that leads to these questions has repeatedly been exhibited of late by students of physical fitness. It formed the theme of an essay by Emerson<sup>1</sup> of Tufts College Medical School in Boston, who has made extensive observations on the youth of preparatory schools and colleges. He asserts that the physical unfitness of these groups was indicated by higher mortality risks, as shown by the medico-actuarial table, and by increased morbidity and lessened efficiency, as evidenced by failure to withstand the pressure of curricular and extracurricular activities. Further evidence of physical unfitness among underweight students was shown by the marked increase of physical defects, by the correlation of underweight and self rating in health, and by the greater number of faulty health habits. Furthermore, a checking up of twenty faulty health habits of 4,366 students at the time of their admission to college shows no improvement during

the seven-year period 1924-1931. There is little difference between students from public high schools and those who prepared in private schools.

In formulating decisions of this sort, much depends on the selected criteria of health and fitness. Emerson lays stress on deviations from the standards of size that he has set up. He firmly avers that marked deviation from the optimal weight zone for any person cannot occur without an adequate cause, namely, either physical defects or faulty health habits. Emerson<sup>2</sup> ventures the following pronouncements. Increase in morbidity is evidenced by the fact that most of the sickness during college life occurs in two groups: respiratory diseases among the underweight and digestive disturbances among the overweight. Lowered resistance appears not only in relation to the incidence of diseases and of nervous disturbances but also in the failure to withstand the pressure of athletic training and of other extracurricular activities. Lessened efficiency is shown by the fact that the highest percentage of failures in preparatory school and college occurs in the seriously underweight and overweight groups. Further evidence of the significance of underweight is shown by the marked increase in physical defects and deformities<sup>3</sup> in this group and by the correlation of safety and danger zone weight to self rating in health.

There may be considerable debate as to the serious role assigned to what are called faulty health habits. In Emerson's judgment, the four leading faulty health habits, for each college class, with a single exception, were no rest periods, fast eating, irregular bedtime, and the habit of having no regular time for bowel movement. Emerson's study of the health of students in eight representative high schools and seven leading private schools shows conditions of physical unfitness closely approximating that found among students entering college. He further alleges that private schools equipped with physical plants, gymnasiums, play grounds, medical staffs, and special teachers of physical administration and dietetics, and with all conditions favorable for carrying out the present accepted health programs, show a greater degree of physical unfitness and a higher percentage of faulty health habits than do the high schools.

Such incriminations call for earnest consideration. The American school and college boy need not become the victim of hygienic indifference, if the current indictments are tenable. Part of the responsibility is placed on the shoulders of medicine. The chief obstacle to health work, Emerson claims, is the persistent idea that if a person is not sick he is well, which prevents the physician from entering the field of health in the same scientific spirit in which he meets the problems of disease. Because of the failure of present health programs as indicated by the extent of physical unfit-

<sup>1</sup> Emerson W. R. P. Physical Unfitness in the Preparatory School. *Am J Dis Child* 44: 509 (Sept.) 1932.

<sup>2</sup> Emerson W. R. P. The College and Physical Fitness. *Dartmouth Alumni Mag* 23: 7 (March) 1931.  
<sup>3</sup> Emerson W. R. P. The Diagnosis of Health. New York: D. Appleton & Co. 1930. p. 30.

ness, the plea is made that medical training should be as efficient in the diagnosis of health as in that of disease. The physician, Emerson concludes, should become the leader and not the follower of lay workers in the field of health. He should become as much an authority in health as in disease. The technical part of physical fitness work, Emerson adds, is largely educational, but its supervision requires efficient training, which thus far has been given little place in medical teaching.

### PROTEIN AND CALORIES

Much attention has been devoted in recent years to the problems of the food requirement at all ages and under the differing conditions of bodily activity that necessarily affect it. As a consequence there is widespread agreement as to energy needs. Concerning the factors governing the energy requirements of children, the reports of the White House Conference<sup>1</sup> point out that because energy is an old story and because rare instances have been discovered in which nutritional failure has resulted from the restricted choice of foods, even when total quantity was plentiful, there has been a tendency in some quarters to regard calories as of no further importance. It requires, the report continues, only the stress of some major calamity such as war or flood or an economic emergency, however, to revive the realization that supplying enough to eat to a population means a sufficiency of calories as well as that freedom of choice which is the everyday guaranty of quality (vitamins, minerals, amino acids).

The difficulties of formulating a warranted opinion about the desirable protein allowance in the diet are somewhat more formidable. Referring to children, Wait and Roberts<sup>2</sup> have remarked that this is so because there is no simple outward method of judging whether the protein ingested is too much or too little to meet the child's actual needs, as there is in the case of calories, with which a consistently excessive or deficient intake is reflected in gain or loss of body weight. It is true that normal growth will not occur on a deficient protein intake, but there is no way of knowing what constitutes normal growth in any one child. Moreover, so many other factors affect growth that failure to grow cannot be attributed solely to a protein deficit. On the other hand, Wait and Roberts conclude, protein in excess of actual needs is oxidized as fuel or stored as body fat the same as carbohydrate, but there is no way of knowing the amount so used.

In the case of adults, the protein requirement has been gaged in several ways. First of all, the dietary habits of many persons in apparent good health have been recorded and the protein intake estimated on the

basis of this experience. Such a procedure assumes that the actual experience and customary habits of mankind are a good guide. A more scientific plan has been to make nitrogen balance studies on persons subsisting on regimens involving different levels of protein intake. An unduly low limit of nitrogenous intake soon betrays itself by failure of the body to maintain nitrogen equilibrium. From studies of the sort referred to it is possible, as Wait and Roberts point out, to arrive at the minimum intake necessary to maintain nitrogen equilibrium and positive nitrogen balance under given conditions. Here again, however, they add, it is difficult to determine the optimum amount required to keep the body in good condition year after year, or to ascertain the maximum amount the body can handle without ill results.

Balance studies are far easier to conduct on adults than on younger persons. For this reason, relatively few investigations on nitrogen balance have been made on children and almost none on adolescent girls of 12 or more years of age, and none of these definitely establish either minimum or optimum values. Recent researches<sup>3</sup> at the Department of Home Economics, University of Chicago, on more than fifty girls from 10 to 17 years of age living under their accustomed conditions and eating a freely chosen diet indicated that the protein intake varied directly with the energy intake. An average of 12.4 per cent of the calories consumed came from protein, and this close relation between protein and calories is further indicated. The girls consumed on an average 1.64 Gm of protein per kilogram. The intake was definitely higher at the younger ages, amounting roughly to 2 Gm at 10 and 11 years, 1.5 Gm from 12 to 15 years, and 1.2 Gm at 16 and 17 years. If one takes these results in connection with the studies of the few balances on normal children and the intake previously reported, Wait and Roberts are inclined to regard these values as tentative minimum standards until further balance experiments have determined more accurately the protein needs of childhood.

The common practice of providing from 10 to 15 per cent of the calories in the form of protein is therefore justified by this study. The simplicity of this method suggests its practical use, especially in providing for groups, when it is assured that ample calories are being consumed, and when there is no necessity for restricting protein to bare requirements. The results recall a war-time warning of the late Sir William M. Bayliss. It may be noticed, he<sup>3</sup> wrote in 1917, that chief stress seems to be laid in diet tables on the energy or calory value of the food. This is justified by the fact, already mentioned, that, if any reasonable kind of combination of foodstuffs is consumed, it will be found that, if taken in the amount necessary to afford the energy value, sufficient protein will be contained in it.

1 Growth and Development of the Child. Part III. Nutrition. White House Conference on Child Health and Protection. New York, Century Company, 1932.

2 Wait, Bernice, and Roberts, Lydia J. Studies in the Food Requirement of Adolescent Girls. III. The Protein Intake of Well Nourished Girls 10 to 16 Years of Age, *J. Am. Dietet. A.* 8: 403 (Jan.) 1933.

3 Bayliss, W. M. The Physiology of Food and Economy in Diet. London, Longmans Green & Co. 1917.

without further addition. Natural foodstuffs, even potatoes, contain more protein than is often supposed to be the case. Pure products extracted from parts of plants or animals, such as sugar or oil, are not likely to be made the sole articles of a diet. Bayliss put the matter thus: "Take care of the calories and the protein will take care of itself."

### VITAMIN D AND WELL BEING

New problems in relation to the possible function of vitamin D in promoting bodily welfare continue to arise, despite the commendable progress of recent years. One concerns the uncertainty of the need of supplementing the diet with added vitamin D if it is liberally supplied with the appropriate mineral constituents, notably calcium and phosphorus. As long as there is a widespread impression of a possible shortage of the bone-forming elements under the current dietary regimens in this country, as Bernheim<sup>1</sup> has recently intimated, the effort to alter prevailing conditions will naturally persist. She ventures the assertion that general health is improved and recovery from disease aided when the optimum calcium supply and utilization are assured. Furthermore, Bernheim insists that utilization of calcium is ineffectual, even with a sufficient calcium intake, unless also the factors that control the absorption of calcium are adequate.

In the symposium on the present status of the knowledge of vitamins,<sup>2</sup> published a few months ago under the auspices of the American Medical Association, Clouse remarked that the question "Why does vitamin D increase mineral retention?" is often asked but so far has not been satisfactorily answered. Since both calcium and phosphorus are excreted largely through the intestinal wall as well as through the kidney, it is difficult, if not impossible, to say whether the increased retention is due to an increased absorption of mineral or to a decreased excretion. A third possible factor might be the deposition of greater amounts of calcium and phosphorus in the bones. Probably the vitamin exerts its influence not in any one direction but to some extent in all three directions.

In new studies on animals that were subjected over long periods to extreme calcium deprivation, Templin and Steenbock<sup>3</sup> of the University of Wisconsin found that the introduction of moderate amounts of vitamin D into the calcium-deficient ration provided considerable protection from mineral losses in a parallel series of rats. Only about 65 per cent of ash was lost from the femurs. These losses present considerable improvement over the 10 per cent losses experienced in the absence of such supplementation. The condition of

the rats was otherwise improved by the presence of vitamin D. Weight losses were greatly reduced, the calcium content of the blood serum was increased, and the parathyroids were maintained almost normal in size.

Such results tend to support the impression of the value of vitamin D as a food constituent for the adult. When the vitamin is supplied in moderate amounts in connection with either a high calcium-low phosphorus rachitogenic ration or a low calcium-low phosphorus ration, calcium and phosphorus are conserved to a remarkable degree. The Wisconsin biochemists frankly insist that it is unwarranted to expect that vitamin D administered in any amount should be able to compensate fully for an extreme lack of calcium or other dietary essentials. As the basal diet was not optimal with respect to protein or phosphorus content, it is possible that the favorable effects of vitamin D on calcium conservation might have been accentuated if the diet had been improved in these respects also. This is equivalent to the much needed reminder that vitamins are by no means the sole essentials for a healthful diet.

### Current Comment

#### URINARY AMMONIA

The body is an acid-producing mechanism. The oxidation of the carbon of the foodstuffs yields carbonic acid, and the metabolism of the sulphur and phosphorus of proteins results in sulphuric and phosphoric acids. Despite the constant formation of these acids, the acid-base balance of the body is so nicely regulated that during health the reaction of the organism remains remarkably constant at about  $p_H$  7.4. One of the noteworthy contributions of biochemistry has been the demonstration of the mechanisms involved in maintaining the acid-base equilibrium. Thus the buffer systems of the body fluids act as a prompt though necessarily temporary defense against the increase in acidity, the ultimate removal of acid occurs through the lungs, kidneys and skin. Obviously there is a constant effort to conserve fixed base. The lungs excrete free carbonic acid, the sweat glands of the skin secrete lactic acid, to a considerable extent uncombined with base, and the kidneys, in addition to conserving base through a shift in phosphates, have the remarkable ability to supplant fixed base in excreted salts with ammonia. It has long been known that urinary ammonia, formed in the kidneys, increases when the need for removal of acid is accentuated. Indeed, an increased concentration of the so-called endogenous base has been taken as matter of fact to indicate acidosis. The ammonia in the urine arises from the urea, there exists a reciprocal relationship between these two nitrogenous compounds. What is the factor that governs the magnitude of the change of urea to ammonia? One naturally turns to the presence of elevated concentrations of metabolic acid as the most obvious cause. That this is not likely was pointed out in 1929 by Oard and Peters<sup>1</sup> on the basis of their

1 Bernheim, Alice R. Calcium Need and Calcium Utilization J. A. M. A. 100: 1001 (April 1) 1933.  
2 The Vitamins Chicago American Medical Association 1932.  
3 Templin, Vera M. and Steenbock, Harry. Vitamin D and the Conservation of Calcium in the Adult. II The Effect of Vitamin D on Calcium Conservation in Adult Rats Maintained on Low Calcium Diets J. Biol. Chem. 100: 209 (March) 1933.

1 Oard, H. C. and Peters, J. P. J. Biol. Chem. 81: 9 (Jan) 1929.

own studies and those of others on the alleged acidosis of pregnancy. The carbon dioxide and serum albumin concentrations are low with accompanying decrease in total base. Under these conditions a larger than normal proportion of total base in the urine is present as ammonia. That the available fixed base in the body is the primary factor in controlling the ammonia output in the urine is thus indicated. Further corroborating evidence is furnished in the observations of Brooke and Smith<sup>2</sup> on experimental animals maintained on rations extremely poor in total base. Under these conditions as much as 95 per cent of the base in the urine was accounted for by ammonia, whereas the value in normal control animals was less than 8 per cent. The importance of the proportion of the components of buffer systems has been emphasized because the strikingly constant  $p_H$  of the blood depends on it, these studies point out a sensitive mechanism in the kidney that is apparently responsive to the quantity of base in the buffer combinations in the circulation.

## Medical Economics

### PRIVATE GROUP PRACTICE

[This is the second part of a series of investigations conducted by the Bureau of Medical Economics of the American Medical Association. The first part was published in *THE JOURNAL* May 20.]

Every attempt to study private medical groups has been confronted with the almost impossible problem of defining the singularly elusive changing and indefinite characteristics of a group or even of giving it a name. The name most frequently used by the medical groups themselves and those discussing them is "clinic" but this title has been so generally applied to another also somewhat indefinite and even more common type of medical practice that it has been thought better to use the more general inclusive term of 'group'.<sup>1</sup>

'Group' in this study designates three or more physicians who have joined for practice and who own certain kinds of equipment aside from office space and employ lay assistants in common. It is frankly admitted that this description is as indefinite as the object defined. The fact is that in almost every case the decision as to whether any particular group should be included has had to be made after a study of all available details as to organization and operation.

The study conducted by the Committee on the Costs of Medical Care<sup>2</sup> gives the following definition:

The private group clinic for the purpose of this analysis may be defined by several characteristic features—professional financial and administrative. (1) Its physicians engaged in cooperative and contiguous medical practice use many facilities in common, particularly office space, laboratories and medical equipment. (2) Its physicians—all or most of them—are associated with the clinic on a full-time basis. (3) Its services include two or more medical specialties and an attempt is usually made to hold available complete facilities for the patients accepted by the clinic although some groups avowedly exclude from their services such specialties as obstetrics, ophthalmology, or dentistry. (4) Its patients are the responsibility of the entire group, not merely of individual physicians although when consultations and special diagnoses are not required one practitioner may alone treat a given case. (5) Its income is pooled and its practitioners have little or no direct financial relationship with patients. (6) Its members determine individual incomes by contract among themselves rather than directly from their services to patients. (7) Its administration is carried on by a business man rather than a physician as far as non-medical matters are concerned. (8) Its credit investigations and collection policies are the specialized functions of a business manager rather than the incidental concerns of the several practitioners.

<sup>2</sup> Brooke R O and Smith A H J Biol Chem, 100 105 (March) 1933.

<sup>1</sup> Davis Michael M Clinic or Dispensary Which? Mod Hosp 26 119 (Feb.) 1928.

<sup>2</sup> Rorem C Rufus Private Group Clinics Washington D C Committee on the Costs of Medical Care, 1931 pp 11-12. For another descriptive definition see Klotz W C Coordinated Effort Brings Better Service Mod Hosp 26 79 (Oct.) 1927.

Considerable difficulty was found in strictly applying these qualifications to actual groups. The third qualification as to 'medical specialties' and 'complete facilities' would require a very liberal interpretation of these terms and of the word 'attempt' and a membership much larger and better organized in these respects than was required for admission even to the study based on this definition. The fourth one conflicts with the general claim made by perhaps a majority of the groups that individual relations and responsibility are maintained between physicians and patients. The fifth and sixth features make financial arrangements the fundamental characteristic. Moreover the wide variety of such arrangements, in which only certain portions of the income are pooled and in which the division of income varies in almost every imaginable way, not only makes this test difficult of application but would include every partnership in which all transactions with patients are not on an exclusively individual basis. The seventh qualification is also too indefinite for application. Would it exclude the group using a woman secretary or even one of its medical members who was believed to possess exceptional business ability? How many and what phases of "administration" must be handled by a business man? The same difficulties are found with the final qualification as to 'credit investigations and collection policies'.

This difficulty of definition is due to the extreme indefiniteness of the thing to be defined which perhaps can be best illustrated by the steps which were taken to determine which groups should be included as proper subjects for this study. A preliminary questionnaire, sent to all secretaries of county medical societies was answered by 1,949 secretaries who listed over 500 organizations which they considered as coming under the classification of group practice. Additional lists from other sources raised the number to 724.

It has been argued that 'the closed staff hospital is in effect a group clinic,'<sup>3</sup> and 1165 such hospitals were listed by the Council on Medical Education and Hospitals of the American Medical Association. An effort was made to ascertain which of these possessed characteristics which required their inclusion within this study although no special circularization of these was made. A questionnaire was sent either to the secretary of the county medical society or directly to each of the approximately 700 groups reported. When a reply was not received from the secretary the questionnaire was sent directly to the group. An examination of the replies with accompanying correspondence showed that, with few exceptions if the secretary was not a member of the group he either gave the questionnaire to the group or verified his reply by personal consultation of the members. The information on these questionnaires was then used as a basis for deciding whether the group should be included. In making this decision due attention was given to the standards set up by previous writers on the subject including those already discussed. A minimum membership of at least three was required although this excluded many associations of two physicians which had adopted some such name as 'clinic' shared ownership in somewhat extensive equipment 'pooled' the income according to fixed provisions had a 'business manager' and in other ways seemed to fit the qualifications.

That the superior publicity value of some such a title as 'clinic' has been generally recognized and adopted for competitive purposes without any attempt to conform to any definite standards is clear. One investigator of this type of practice said:<sup>4</sup>

there were found organizations designated as group clinics which on very slight investigation were found to be merely a trade name for the office of an individual physician who might have one or two assistants. A more worthy example listed among group clinics was found to be simply an association of two physicians sharing the expense of office facilities.

So-called 'diagnostic clinics' the main function of which is to do laboratory and other work for outside practitioners were excluded. No closed staff hospital was included unless the staff operated as a more or less organized group in private practice outside the hospital. Groups that appeared to be

<sup>3</sup> Sloan E P The Group Clinic Illinois M J 55 395 (June) 1929.

<sup>4</sup> Klotz, p 77.

primarily the industrial departments of a single industry were also excluded. The fact that many groups were changing form even while under observation made certainty of classification more difficult.

Letters and questionnaires brought information showing that about half of the 700 reported groups did not conform to a

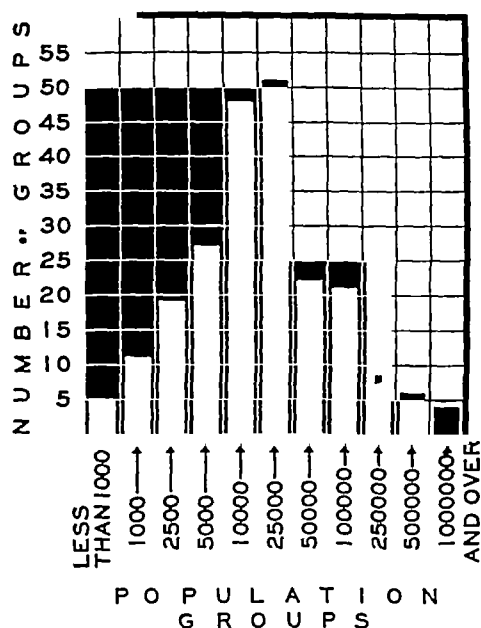


Chart 1—Number of groups according to size of community

sufficient number of the standards that had been set up to entitle them to inclusion in this study, although, as already mentioned, many of these called themselves "clinics" and were so considered in their localities. Many of these were partnerships of only two physicians or, if composed of a larger number, had little in common beside a reception room and telephone service.

From all the information received it was determined that there are over 300 groups in the United States that would come within the classification fixed by these standards. Of these, 239 filled out the questionnaire in a sufficiently complete form to make it available for study. That not only is this a fair sample but that no appreciable change would be produced in any of the conclusions by returns from those not replying is shown by the fact that an analysis of the first 100 received gave results as to averages and similar computations almost identical with those derived by more than doubling the number.

Although the Mayo Clinic cooperated fully in the study and furnished complete information it was decided that, owing to its wholly unique character its inclusion would distort all conclusions. Moreover, the organization and operation of this clinic has been so frequently and adequately described elsewhere as to make any discussion that could be given here superfluous.

#### GEOGRAPHIC DISTRIBUTION

One or more groups were reported from each of thirty-seven states, showing a very wide dispersion of this form of medical organization. The states from which no groups were reported were Connecticut, Delaware, Idaho, Maine, Maryland, Nevada, New Mexico, Rhode Island, South Carolina, Vermont and Wyoming. The states reporting ten or more groups were Texas, twenty-seven, Wisconsin, twenty-three, Minnesota, eighteen, California, seventeen, Indiana, thirteen, Illinois, eleven, and Washington, eleven. An analysis of the distribution according to the size of the cities shows at once that this form of practice offers no contribution to the problem of metropolitan medical service. Nearly 50 per cent of the groups are found in cities of less than 25,000 population, and over 67 per cent in those under 50,000, while a trifle over 4 per cent are located in cities above 500,000.

It is not easy to determine the reasons for this concentration of 67 per cent of the groups in cities under 50,000 with

but 21 per cent of the population. Even if the rural population dependent on these smaller cities is included, the disproportion is great.

Some suggestions as to the reasons for group formation appeared in the answers to the first questionnaire by secretaries of county medical societies. An effort to supply a lack of laboratory and hospital facilities was the avowed motive back of the formation of several groups in the smaller cities. Such a motive is not felt by the individual practitioners in the large cities with ample and easily accessible hospital and laboratory services. The very existence of extensive hospital, clinic and outpatient services provides medical care for many who, in a smaller place, would patronize a group.

Another possible element is the closer association of physicians in a small city. Groups are formed quite largely of personal friends, who have already been somewhat closely associated professionally. They have been referring patients to each other, and association in a definite group is often little more than formal recognition and systematic arrangement of previous informal relations.

In a large city the well known physician, particularly the specialist, builds up his own clientele and establishes relations with a large number of his confrères. The formation of a group, which could not include all those with whom he had such relations, would limit rather than extend his influence and his income.

The publicity and prestige which accompany the formation of a group in a city of less than 50,000 population, where such publicity depends so much on word of mouth dissemination is more conspicuous than in a metropolis, where the prestige of certain individual practitioners is apt to be greater than that of a group which lacks any especially outstanding personalities. A metropolitan group, deprived of this inherent local

TABLE 1—Number of Groups by States and Population of Locality

	< 1000	1000 to 2500	2500 to 5000	5000 to 10000	10000 to 25000	25000 to 50000	50000 to 100000	100000 to 250000	250000 to 500000	500000 to 1000000	Total
Alabama					3						3
Arizona						6					6
Arkansas			1								1
California		2			3	2					7
Colorado			1		2						3
Florida								1		3	4
Georgia					5						5
Illinois			3	5	1	3					12
Indiana			1	1	4	2					8
Iowa		1	2		2		1				6
Kansas		1			5						7
Kentucky				1		1					2
Louisiana					1	1					2
Massachusetts									1		1
Michigan		1	1				1			1	4
Minnesota	1	1	2	4	3		1	1			13
Mississippi			2		2	1					5
Missouri				1						1	2
Montana			2	1	2						5
Nebraska		2		1	2		2				7
New Hampshire			1								1
New Jersey								1			1
New York				1							1
North Carolina					1	2					3
North Dakota				2	1	1					4
Ohio					1			2	3		6
Oklahoma					3	2					5
Oregon						4		2			6
Pennsylvania					1		1				2
South Dakota			2		6						8
Tennessee				1					1		2
Texas		1	2	3	5	4		4	8		27
Utah				1				3			4
Virginia						1		2			3
Washington					1	4		1	5		11
West Virginia											0
Wisconsin		2	4	4	1	1	0	2			14
Totals		5	11	10	27	48	51	22	21	25	239

publicity can secure an equivalent prominence only by some form of more or less direct advertising, a fact which removes from ethical practitioners one of the incentives to form a group.

#### AGE AND GROWTH

Any attempt to determine the rate of growth is met with an almost complete lack of information as to the mortality rate of groups. It is certain that a considerable number of groups

have been dissolved or have failed. The results of an effort to ascertain the reasons for such disappearances are given later, but all attempts to secure sufficient data to determine the average length of life or the annual rate of dissolution resulted in too meager returns to justify any conclusions as to rate of growth. Any such conclusions therefore, must be drawn almost wholly from the dates of founding of existing groups. This manifestly gives an exaggerated picture of the rate of growth, since it is probable that the mortality rate remains much the same each year and that, accordingly, a larger percentage of those now operating were formed in recent years than of those established at an earlier period.

Bearing this consideration in mind it is noteworthy that only eighteen of the reporting groups were founded prior to 1912, in which year nine more of those now existing were established. The founding of groups is closely influenced by general economic conditions. There are peaks in the 'prosperity' periods 1918-1920 and 1927-1929 and corresponding declines in the 'depression' years that followed.

When the cumulative totals for each year were plotted on a logarithmic scale the line showing the rate of growth rose faster from 1914 to 1920 than the general trend. Since 1920 it has risen slower than the general trend. This would seem

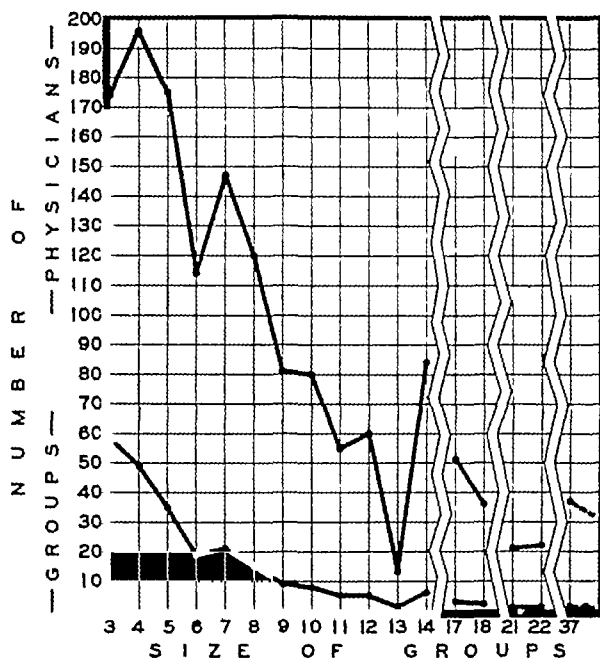


Chart 2—Number of groups and physicians according to size of group. Upper line physicians. Lower line number of groups.

to indicate a slowing up in the rate of growth, a conclusion that receives further support from the opinions of a majority of the secretaries of county medical societies.

Since the fact of this slowing of the rate of increase is by no means certain and if it does exist, may be a temporary phenomenon owing to special industrial conditions, it is probably too early to discuss its causes. But it may be suggested that the extension of laboratory and hospital facilities and the growth of outpatient departments with free and pay clinics may be setting limits to further extensive growth of private groups.

#### SIZE OF GROUPS

There were 239 groups that reported the number of physicians included. These had a total membership of 1,466 physicians and 96 dentists, an average of 6 physicians to a group. The median of membership falls between five and six members, and the average is, as just stated, six. Less than 13 per cent of the groups have ten or more members, and these include but 30 per cent of the physicians in group practice, while 37 per cent of the physicians are found in groups with a membership of five or less.

Do the groups tend to become larger? This question may be put in two ways. 1. Have the older groups tended to

grow to greater and greater size? 2. Are the groups formed in recent years including a larger number of physicians? It is impossible to give a positive answer to either of these questions, but an analysis of the size of groups by years gives a strong suggestion of probable trends in these respects. If there is any general and regular tendency for groups to grow

TABLE 2—Number of Members According to Size of Group

Number in Group	Number of Groups	Total Physicians in Groups of Size Given	Per Cent of Total	Cumulative Percentage
3	55	174	12	12
4	40	160	13	25
5	37	175	12	37
6	10	114	8	45
7	21	147	10	55
8	11	120	8	63
9	9	81	6	69
10	8	80	5	74
11	5	55	4	78
12	5	60	4	82
13	1	13	1	83
14	6	84	6	89
17	3	51	3	92
18	2	36	2	94
21	1	21	1	95
22	1	22	2	97
37	1	37	3	100
	239	1466		

by the addition of new members, one should expect to find the largest groups among those first established. Of 38 groups with 212 members formed prior to 1916 only 1 has at present more than 10, only 2 others have as many as 10 members, and the average membership is 4.6. With 1916 a period of rapid growth began that reached its peak in 1920, when 22

TABLE 3—Size of Groups by Year of Formation

Year	Number of Physicians in Group																						Totals	
	3	4	5	6	7	8	9	10	11	12	13	14	17	18	21	22	37	Groups	Phys					
1890	1		1															2	8					
1891																		1	9					
1892							1																	
1893																		1	9					
1894																								
1895				1														1	5					
1896																								
1897																								
1898				1		1												2	13					
1899																								
1900		1				1												2	11					
1901																								
1902							1											1	8					
1903			1															1	4					
1904	1																	1	3					
1905		1				1												2	11					
1906																								
1907																								
1908	1																	1	4					
1909																								
1910							1				1							2	20					
1911			1		1													2	10					
1912	3			2	1	2			1									9	49					
1913		1																1	4					
1914	1		1				1											3	16					
1915	2	2		1		1	1											7	38					
1916				1		1			1	1								6	64					
1917	1	1						1										3	10					
1918		1	2	3		2		1										8	62					
1919																1		11	84					
1920	3	5	5	2	2	2	1		1	1	2		1	1				22	178					
1921	4		1		1	1												11	98					
1922	1	3	2	1	1	1		1										9	47					
1923	2	3	1		1	1												9	57					
1924		2			2	2					1	1	1		1			9	78					
1925	3	3	2		1	2				1								12	65					
1926	3	3	1	2	1			1	1									12	64					
1927	2	2	4		1			1	1									11	60					
1928	6	5	3	1	2	1		1										18	87					
1929	9	6	1	1	2	1					1						1	22	133					
1930	4	2	1			2				1								10	51					
1931	6	1	2	1														10	35					
1932	3	2			1		2											9	46					
	55	48	34	18	22	15	9	7	3	6	1	5	3	1	1	1	1	239	1397					

groups comprising 133 members were organized, after which the annual growth declined to 9 groups with 78 members in 1924. The total number of groups formed in this period of nine years was 88 with a total present membership of 641 or an average of 7.3 members per group. Beginning in 1925 there was another period of accelerated increase reaching in 1929, the same peak of 22 groups having 133 members and ending again with 9 groups and 78 members in 1932. The

total number of groups formed in this period of eight years was 104, with a membership of 544, an average of 5.2 members per group. This would certainly seem to indicate that the size of groups has been decreasing since the first period of rapid growth. When it is also considered that the population of the United States increased from 105,710,620 in 1920 to 122,775,046 in 1930 and the number of physicians from 145,404 in 1921 to 156,440 in 1931, it does not appear that the percentage of physicians entering group practice has increased during recent years. This conclusion is strengthened by the fact that if the mortality rate among groups has remained anywhere near constant the percentage of groups

as now in existence. Of these, 20, or a little less than one fourth, are incorporated. In the second decade 123 were organized, of which 17, or a little less than one-seventh, were corporations. Even considering the probability that the corporate form has attained one of its objects, a lower mortality rate, it would still seem that any tendency that may exist is away from the corporate form.

#### SPECIALIZATION WITHIN GROUPS

The principal argument offered in urging the extension of group practice is that a group assembles in one place all the essentials required for complete diagnosis and treatment of the patient. It is claimed that a group consists of a sufficient number of adequately trained specialists to permit reference to whatever specialist may be necessary for proper diagnosis and treatment. At least two writers have outlined what they consider the minimum composition of a group. The first<sup>5</sup> after saying that 'a minimum number should be at least four' added "A surgeon, internist and E. E. N. & T. are indispensable. The fourth may specialize in x-rays and physiotherapy, urology, laboratory, pediatrics or other branches

TABLE 4—Running Average Size of Groups for Five Year Periods

Year	Average No. of Members
1916	6.57
1917	6.90
1918	7.21
1919	7.61
1920	7.86
1921	7.21
1922	7.01
1923	6.79
1924	6.81
1925	6.86
1926	6.61
1927	6.01
1928	5.70
1929	5.41
1930	5.41
1931	5.19
1932	5.14

organized in the period 1916-1924 which have since disappeared must be greater than the corresponding percentage for the more recent period 1925-1932.

There is a well established statistical method of determining whether an apparent trend is consistent. This is the method of "running averages," by which the figures are grouped in regular intervals with the earliest year in the group dropped and an additional year added for each computation. The use of this method with groups of five, the first group ending in 1916, gave the results shown in table 4.

Here is an unmistakable trend line showing that according to year of formation the groups reached their peak as to size in the years 1918 to 1921 and have been steadily diminishing ever since.

This average is considerably modified by the presence of a single group, with thirty-seven members, organized in 1929, which differs quite widely in nearly all its characteristics from any other organization. It is primarily a "voluntary health insurance plan" and is so designated in a study made by the Committee on the Costs of Medical Care. If this single organization is omitted from the table, the last four cumulative averages would be as follows:

1929	5.0
1930	4.9
1931	4.7
1932	4.0

Standing alone, any one of these tests would probably be inconclusive, and if any one contradicted the others it would raise a doubt. But when all give the same reply there is every reason to say that so far from following the industrial trend toward greater and greater size, groups have for several years been growing smaller.

#### FORM OF ORGANIZATION

While there are individual variations in detail, the organizations are of three general types: partnerships, corporations and individual ownership. By far the largest number are partnerships. Of 227 replying to the question on the form of organization, 140 were partnerships, 45 corporations and 42 individually owned. It is difficult to secure any conclusive evidence of any tendency of one of these forms to supplant either or both of the others. There were two decades in which the progress of group formation was exceptionally rapid—from 1912 to 1921 and from 1922 to 1931 inclusive. Of the groups formed in the first period, eighty-two were reported

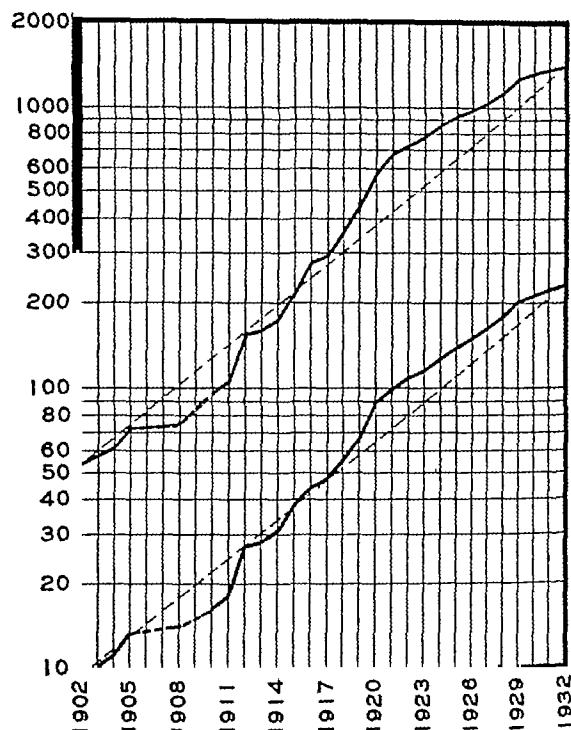


Chart 3—Growth of groups by years. Upper line total number of physicians—lower line number of groups. Trend lines dotted.

Pediatrics is a happy choice, since this branch is most important and one of the most neglected in smaller communities." A somewhat higher standard is set by the other writer "Every group should comprise, at least, an internist, a surgeon and a gynecologist, a pathologist, a roentgenologist, a urologist and proctologist, a specialist in eye, ear, nose and throat diseases, a dentist and a trained nurse."

Information as to the specialties practiced was furnished by 223 groups having a membership of 1,357 physicians and 90 dentists. The distribution of specialists within these groups as reported by the groups themselves is shown in table 5. When a physician reported that he practiced two specialties, each was counted as one-half. In the few instances when a claim was made that a physician practiced more than two specialties, all but the first two were discarded. The inclusion of these, with corresponding fractions would not have materially affected the totals.

The table as it stands, would appear to indicate a more minute subdivision and consequent inadequacy of representation.

<sup>5</sup> King, D. D. Group Practice in the Smaller Communities, Nebraska M. J. 10: 220 (June) 1925.



1931 directory, the latest edition. These are probably young physicians or those who have recently been licensed.

Of the remaining 309 there were 291, or 94 per cent, who were members and 211, or 68 per cent, who were Fellows of the American Medical Association. Two hundred and fifty-three of these were listed as specialists in some department of surgery and fifty-six as general practitioners. There were 166, or 54 per cent, who were members of 1 or more special societies and 143 who did not belong to any such society. Of these memberships 164 were in the American College of Surgeons, 14 in the Southern Surgical Society, 9 in the Western Surgical Association, 5 in the American Surgical Association, 4 in the Pacific Coast Surgical Association, 4 in the New England Surgical Society, 2 in the Associated Anesthetists of the United States and Canada and 1 in the Society of Neurological Surgeons.

The next largest group of specialists which it is possible to classify in this manner is composed of those treating the eye, ear, nose and throat. Of 184 complete and 7 partial specialists in this field the names of 144 were given, of which there were 141 listed and 3 not listed in the 1931 directory. Of these 141, 139 were members and 101 Fellows of the American Medical Association. One hundred and sixteen are listed in the directory as specialists and twenty-five as general prac-

tory, and 34 did not answer this question. Of the eighteen there were eight that said they used a laboratory in a hospital, which was usually owned or controlled by the group. Some of the others listed equipment owned by the group although they did not call the office a laboratory. Such equipment has been included in the totals.

There were 213 groups that stated they had roentgenologic equipment, 65 an electrocardiograph, 190 some material for physical therapy treatment and 192 apparatus for testing metabolism. Eighteen groups reported the possession of varying quantities of radium. It must be at once recognized that these bald enumerations are far from giving any accurate picture of the scientific equipment of medical groups. Comment accompanying these replies showed that there is the widest variation in the character of this equipment. Roentgen equipment, for instance, varies from the simplest single machine to a whole battery of several types, including those required for high voltage therapy and other radiant treatments. The variation is perhaps even wider in the department of physical therapy. Some groups have little more than a simple infra-red lamp, while others reported elaborate apparatus for all forms of treatment. It can only be said that these replies indicate that there is nothing approaching standardization in regard to the equipment required in group practice. Further

TABLE 7—Distribution of Specialists According to Size of Group

Type of Practice	Size of Groups																								Total											
	3		4		5		6		7		8		9		10		11		12		13		14		17		18		21		22		Total			
	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Complete	Partial	Total			
General practice	29	23	24	28	28	7	14	3	14	8	20	5	4	3	4	3	2	6	13	1	2	2	4	6									164	86	250	
Surgery	34	21	41	32	30	12	25	5	21	9	26	5	19	1	13	5	7	3	10	2	2	2	13	4	10	3	9						266	95	361 1/2	
Internal medicine	21	11	22	9	17	3	17	8	22	5	12	5	11	4	14	4	8	1	7	4	3	4	22	1	14	3	7						203	71	273 1/2	
O. A. L. R.	18	4	20	2	2	14	28	16	1	9	12	7	7	2	2	12	7	7	7	2	2	2	2	2	3	0	3						184	7	191 1/2	
Obstetrics and gynecology	4	17	6	12	7	7	6	7	5	6	5	6	3	4	7	3	4	2	4	3	1	6	4	2	6	1							62	81	143 1/2	
Urology	2	3	6	3	3	4	5	3	10	3	6	2	7	3	4	7	2	5	2	4	1	2	5	3	4	1	2						64	23	78	
Pediatrics	8	7	5	9	4	6	8	2	4	3	3	3	2	3	4	1	4	3	2	1	4	2	3	2	2							50	41	91 1/2		
Roentgenology	2	6	3	0	0	6	3	1	9	2	4	2	3	3	3	2	4	1	3	1	1	2	1	1	2	1							45	36	81	
Orthopedic surgery	1			1	2		1		5		2		2		2		1		1		2		5				4						29	1	30 1/2	
Pathology and laboratory			1	2			4		6		1	1	1	2	4		2		1	1	1		1	1	1		1						21	9	30 1/2	
Neurology					1	1		1			2		1		1	1	1	1	1	1		3		1	1								9	5	14 1/2	
Dermatology			1					2							1	1	1	1	1			1	1			1							5	6	11	
Proctology				1		3		2	1						1													1						2	8	10
Physical therapy		1				1		1						1					1			1							1					2	6	8
Anesthesia			1				1																											4	4	8
Tuberculosis			1					1																										2		2
Total	119	92	131	98	120	60	98	32	129	36	97	30	62	20	67	26	44	22	53	14	11	4	7	18	43	16	3	11	20	22			1	117	480 1/2	597
Number of groups	50		40		29		19		21		14		8		8		5		5		1		6		3		2		1					223		

tioners. Seventy-one are members of some special society and seventy hold no such membership.

There were forty-nine complete and seventeen partial specialists in urology. The names of fifty-eight of these were given of whom fifty-four were members and forty-one Fellows of the American Medical Association. Fifty of these were listed as specialists and eighteen as general practitioners. Twenty-four were members of special societies and thirty-four held no such membership.

Owing to combinations and natural affiliations between the different specialties which make any classification as to listing and special societies apt to be misleading no attempt has been made to analyze these facts in regard to obstetricians, gynecologists and pediatricians. The number of specialists in other lines is so small that such an analysis would mean little.

There was a total of 1,079 physicians in group practice whose names were returned on the questionnaires. Of these 1,019 were members and 719 Fellows of the American Medical Association, and only 60 nonmembers. Expressed in percentages, this would indicate that 94 per cent of the physicians in group practice are members and 66 per cent Fellows of the American Medical Association.

#### EQUIPMENT

Of the 239 groups that returned the questionnaire, 217 stated that the group owned, and 18 that they did not own a labora-

tory, and 34 did not answer this question. Of the eighteen there were eight that said they used a laboratory in a hospital, which was usually owned or controlled by the group. Some of the others listed equipment owned by the group although they did not call the office a laboratory. Such equipment has been included in the totals.

#### OWNERSHIP OR CONTROL OF HOSPITAL

There are usually very close relations between the group and some one hospital, although a number of reports stated that all the local hospitals were used. Of 237 groups replying to the question regarding relations with hospitals 76 stated that the group or one of its members owned or controlled a hospital or, in a few cases the hospital corporation owned the group. Of the 161 groups which stated they did not directly own or control a hospital there were 22 in which all the members of the group were on the staff of some one hospital. Two reported that the group owned stock in a hospital, and another that the group had its offices in a hospital.

Since the latter comments were largely in the nature of volunteered information, it is probable that similar relations exist with many other groups that do not directly own or control hospitals.

# FINANCIAL RELATIONS WITH PATIENTS

There were 225 groups that replied to the question "Are patient's financial relations with group or with individual physicians?" Of these, 175 stated that such relations were with the group 47 with individual physicians and 3 with both. These answers were modified by comments from those stating that relations were with the group to show that in nineteen groups there were certain financial relations with the individual physicians. Similar modifications indicated that in eight of the groups in which the relations were primarily with individual physicians certain charges generally those for laboratory or industrial work, were handled by the group.

In order to ascertain whether the nature of these relations was determined by the size of the group a further analysis was made of those groups in which the relations were with the individual physician. It was found that the average size of such groups was six and five-tenths as compared with an average of six for all the groups covered by the study. Among these forty-seven were groups with fifteen seventeen twenty-one and twenty-two members. Their operation in all medical matters was in no way distinctive or different from those in which financial relations were with the group. Pooling of income and its distribution according to some arbitrary predetermined plan seems to have nothing to do with the question of the quality, method of giving or other characteristics of medical practice.

No tendency is apparent toward a general adoption of a policy of pooling or of retaining individual financial arrangements. Comparison of the dates of formation of the groups with individual relations show that these constitute about the same percentage of the total number at all times during the last twenty years.

(To be continued)

## Association News

### THE MILWAUKEE SESSION

#### Annual Meeting of Medical Veterans of the World War

The annual meeting of the Medical Veterans of the World War will be held at 9 p. m., Wednesday, June 14, at the Eagles Club Milwaukee. There will be an informal smoker reception and luncheon. Dr Gilbert E. Seaman, 324 East Wisconsin Avenue, Milwaukee is the chairman of the committee in charge of arrangements for this meeting. Members of the Association of Military Surgeons and all medical veterans of the World War, including physicians who served as medical advisers to government units and draft boards, are invited to attend.

#### University of Wisconsin Medical School Alumni Dinner

Alumni of the University of Wisconsin Medical School will have an old fashioned German dinner and reunion at the Wisconsin Club on Wednesday, June 14 at 6:30 p. m. All physicians who have been affiliated with the medical school for two or more years are invited to attend. Reservations should be made through Dr Chester W. Long, 208 East Wisconsin Avenue, Milwaukee, as early as possible.

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time over Station WBBM (770 kilocycles or 389.4 meters). The subjects for the week are as follows:

May 30 Holiday No broadcast  
June 1 Pains and Pills

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM. The subject for the week is as follows:

June 3 Allergy in Childhood I

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH, ETC.)

### ALABAMA

**Society News**—Dr Charles Marshall Hamilton and Dr Wilder Walton Hubbard, Nashville, Tenn., spoke before the Lauderdale County Medical Society, April 4, on diseases of the skin and pneumothorax in the treatment of tuberculosis, respectively.—Dr Gerald G. Woodruff, Anniston, addressed the Calhoun County Medical Society, April 4, on "Blood Pressure in Pregnancy."—Dr Andrew L. Glaze, Jr., Birmingham, was the principal speaker before the Madison County Medical Society, April 10 on eczema.—Dr Ernest W. Goodpasture, Nashville, Tenn., gave an address at the University of Alabama School of Medicine, University, April 28 on "A Medical Pageant."—Dr David S. Moore, Jr., Birmingham, has been elected president of the Alumni Association of the University of Alabama Medical School.—The Tuscaloosa County Medical Society and the student body of the University of Alabama School of Medicine were addressed, April 21, by Drs John J. Shea and Ralph E. Semmes, Memphis, Tenn., on "Management of Fractures of the Bones of the Face and Head and Brain Injuries," respectively. A joint meeting of the society and the medical staff of the Veterans Administration Faculty at Tuscaloosa, May 3, was devoted to presentation of cases. Included on the program were Drs George L. Johnson, Herbert Caldwell, Joseph Rothman, George W. Kiehnhoff, James B. Berardi and Matthew T. Moorehead, Jr.

### ARIZONA

**State Medical Election**—Dr Nelson C. Bledsoe, Tucson, was installed as president of the Arizona State Medical Association at its annual meeting in Tucson, April 20. Dr Fred G. Holmes, Phoenix, was named president-elect and Dr Delamere F. Harbridge, Phoenix, reelected secretary. The next annual session will be held at Prescott in April, 1934.

### ARKANSAS

**State Medical Meeting and Election**—At the annual meeting of the Arkansas Medical Society in Hot Springs National Park, May 2-4, Dr Leonce J. Kosminsky, Texarkana, was installed as president, and Dr Fergus O. Mahony, El Dorado, named president-elect. Other officers are Drs Dewell Gann, Sr., Benton; James H. Fowler, Harrison, and John E. McGuire, Piggott, vice presidents, Dr Royal J. Calcote, Little Rock, treasurer, reelected and Dr William R. Bathurst, Little Rock, secretary, reelected. The program consisted of addresses by the following physicians, among others:

Dean Lewis, Baltimore: Diagnosis of Bone Tumors.  
Everts A. Graham, St. Louis: Consideration of the Factors Influencing Mortality in Acute Empyema.  
Darrmon A. Rhinehart and William E. Gray, Jr., Little Rock: Importance of X-Ray Examination in Diagnosis of the Chest.  
Jesse D. Riley, State Sanatorium, Antituberculosis Progress.  
Herbert Fay H. Jones, Little Rock, Transurethral Prostatic Resection.  
Charles S. Holt and Frederick H. Krock, Fort Smith: Tragedies of Surgery.  
Herbert Moulton, Fort Smith: Phases of Vastoid Disease.  
Robert Caldwell and Royal J. Calcote, Little Rock: Enucleation: Indications and Contraindications.  
Lucian H. Lanier, Texarkana: Value of Correctly Fitted Glasses in Modern Ophthalmic Practice.  
Lowry H. McDaniel, Tyrone: Observations on Pellagra.  
Philip F. Barbour, Louisville, Ky.: Chorea.  
Henry H. Turner, Oklahoma City: Hormones of the Anterior Pituitary.  
Shelby B. Hinkle, Little Rock, Birth Injuries.  
Grayson E. Tarkington, Hot Springs, Evaluation of the Swift Ellis Therapy in the Treatment of Neurosyphilis.

### CALIFORNIA

**Decrease in Infant Mortality Rate**—There were 4,125 infant deaths in California in 1932 as compared with 4,609 in 1931, giving a rate of 52.8 per thousand live births as compared with an earlier rate of 56.5. Lower infant mortality rates prevailed among all races except Indian, Chinese and Japanese. The rate for white infants fell from 41.8 in 1931 to 40 in 1932. The death rate for Negro infants fell from 74.2 in 1931 to 58.6 in 1932. The rate among Mexican infants fell from 127.1 in 1931 to 118.9 in 1932. This decrease was probably influenced by the extensive migration of Mexicans to their mother country, the California department of health bulletin stated.

**Lectures on Heart Disease**—The prevention and relief of heart disease was the theme of an institute recently conducted in San Francisco by the San Francisco Heart Committee of the local county medical society. The lectures were arranged for public health nurses, physical education teachers and medical social service workers and were sponsored by the department of public health, the physical education department of the board of education and the Cardiac Center of the American Association of University Women. Speakers included Drs Walter H. Brown, on "Heart Disease a Public Health Problem," Clain F. Gelston, "Heart Disease in Infancy (Birth to Five Years)," John J. Sampson, "Prevention and Care of Heart Disease During Childhood and Adolescence (Six to Twenty Years)," and John P. Strickler, "Heart Disease in the Adult." The total attendance was about 1,000.

**State Medical Meeting and Election**—Dr. George G. Reinle, Oakland, was installed as president of the California Medical Association at the annual meeting, April 26. Dr. Clarence G. Toland, Los Angeles, was named president-elect and Dr. Emma W. Pope, San Francisco, was reelected secretary. The next annual session will be held at Riverside. Among the speakers on the program were the following physicians:

Ray Lyman Wilbur, Stanford University, Medicine at the Crossroads.  
Arthur C. Christie, Washington, D. C., Significance to the Medical Profession of the Report of the Committee on the Costs of Medical Care.

Roscoe G. Leland, director, Bureau of Medical Economics, American Medical Association, Chicago, New Forms of Medical Practice.

Cyrus C. Sturgis, Ann Arbor, Mich., Nature of Pernicious Anemia and a Consideration of Recent Advances in the Treatment of the Disease.

Harvey B. Stone, Baltimore, Living Grafts of Endocrine Glands.

Louis H. Maxson, Seattle, Spinal Anesthesia, Technic, Records and Results.

Gershom J. Thompson, Rochester, Minn., Surgical Treatment of the Prostate.

## COLORADO

**Changes in Faculty**—The following changes in faculty at the University of Colorado School of Medicine, Denver, have been recently reported:

Dr. George S. Johnson, appointed as associate professor of psychiatry and neuropathology.

Dr. Paul H. Guttman, appointed as assistant professor of pathology.

Drs. Ralph W. Damsel and Maurice E. Matcove, appointed instructors in ophthalmology.

Dr. Ora L. Huddleson, appointed instructor in physiology and pharmacology.

Dr. Enid K. Rutledge, appointed instructor in pathology.

Dr. John B. Davis, resigned as associate professor of surgery (urology).

Dr. William C. Finnoff, resigned as associate professor of ophthalmology.

## CONNECTICUT

**Bill Introduced**—A substitute for H. 502 proposes to authorize the state department of health instead of the governor, to license annually institutions for the treatment or detention of insane persons or persons suffering from other abnormal mental or nervous conditions. The department is to be authorized to prescribe a sanitary code for the government of such institutions and to revoke licenses for stated causes.

## DELAWARE

**Society News**—Dr. George E. Pfahler, Philadelphia, addressed the New Castle County Medical Society at Wilmington, April 18, on "Irradiation Treatment of Uterine Tumors." Case reports were given by Drs. Louis S. Parsons, Wilmington, and Edgar R. Miller, Richardson Park, on "Congenital Occlusion of the Common Bile Duct" and "Undulant Fever" respectively. Dr. Wilmer Krusen, Philadelphia, delivered a public lecture, April 21, on "Pharmacy and the Public." C. J. Hollister, DDS, chief dental division, Pennsylvania State Department of Health, gave a public address, April 26, on "Effect of Teeth on the Future of Our Country." These lectures were under the auspices of the Delaware Academy of Medicine.

## DISTRICT OF COLUMBIA

**Society News**—Speakers before the Medical Society of the District of Columbia, March 29, were Drs. William Calhoun Stirling, Jr., on "Recurrent Cancer of the Prostate Unrelieved by Prostatectomy Treated by Transurethral Resection," and Richard A. Kearny, "Observations and Considerations on the Diagnosis and Treatment of Mastoiditis."—Dr. Wallace M. Yater addressed the District of Columbia Dental Society, March 28, on "How Much of a Physician Should a Dentist Be?" and "Fundamentals of Heart Disease." George R. Ellis, DDS, spoke on "Relation of General Dentistry to Systemic Diseases." Boyd S. Gardner, DDS, Rochester, Minn., addressed a joint meeting of the society with the Medical Society of the District of Columbia, March 22, on the relationship between medicine and dentistry.

**District Election**—Dr. Prentiss Willson, Washington, was elected president of the Medical Society of the District of Columbia at its annual session, May 3, to serve from July, 1933, to June 30, 1934. Vice presidents are Drs. Daniel Leray Borden and Margaret Mary Nicholson. Dr. Coursen B. Conklin, Washington, was reelected secretary. Included among the speakers on the program were Drs. Leonard G. Rowntree, director, Philadelphia Institute for Medical Research, Philadelphia, on "Recent Advances in Diseases of the Endocrine Glands," and Maude E. Abbott, curator of Medical Museum, McGill University, Montreal, "Personal Reminiscences of Osler and Remarks on His Contribution to Our Knowledge of Heart Disease." Dr. Dean Lewis, Baltimore, President-elect, American Medical Association, addressed a public meeting, April 26, on "Changing Times in Medicine."

## FLORIDA

**Bills Introduced**—S. 471, to amend the laws regulating the possession and distribution of narcotic drugs, proposes (1) to prohibit the possession of any narcotic drug or cannabis indica except on the written prescription of a duly licensed physician, dentist or veterinarian, (2) to make a violation of the act a felony, punishable by one year in prison and a fine of not less than \$1,000, or both, and (3) to make it the duty of the state board of health and of all peace officers to enforce the provisions of the act. H. 1070 proposes to forbid the selling at retail of marihuana, marijuana, cannabis indica, hashish, gangah, gringah, bhang, loco weed, or any compounds containing cannabene, cannabinol or lacome except by a licensed druggist on the written prescription of a licensed physician or dentist.

## GEORGIA

**State Medical Election**—Dr. Clarence L. Ayers, Toccoa, was named president-elect of the Medical Association of Georgia at the close of the annual meeting in Macon. Dr. Charles H. Richardson, Jr., Macon, was installed as president and the following were elected vice presidents: Drs. Joseph D. Apple, white, Macon, and William W. Turner, Jr., Nashville. The 1934 session will be held in Augusta.

## ILLINOIS

**State Medical Election**—Dr. Charles D. Center, Quincy, was chosen president-elect of the Illinois State Medical Society at the annual meeting in Peoria, May 18, and Dr. Philip H. Kreuscher, Chicago, became president. Vice presidents elected were Drs. Charles G. Farnum, Peoria, and Harold V. Gould, Chicago. Dr. Harold M. Camp, Monmouth, was reelected secretary. The society will meet in Springfield in 1934.

**Dr. Ascher Elected Mayor**—Dr. John A. Ascher was elected mayor of Freeport, April 4, and he assumed office, May 1. Dr. Ascher, who is a member of the board of censors of the Stephenson County Medical Society, was president of the society in 1926. In Sparks, Nev., where he practiced for several years, Dr. Ascher served at different times as city and county health officer.

**Campaign Against Diphtheria**—A house to house canvass throughout Decatur is part of a special campaign against diphtheria being carried on under the auspices of the community health council and the city health officer, the *Illinois Health Messenger* reports. A chairman and twenty or more workers for each of twenty-five districts were recruited from volunteers in parent-teacher associations. Each worker was assigned a definite area. Every home is visited and a record obtained of all children under 16 years of age. Literature on diphtheria prevention is left with the parents. For persons unable to pay special clinics are being held the first of which was scheduled, April 15. In addition to the canvass, illustrated lectures were given in various parts of the city.

## Chicago

**Case Nolle Prossed**—The case of Dr. Anthony M. Catania, who had been indicted by the grand jury, Dec. 28, 1932, on a charge of murder by abortion, was nolle prossed by the state's attorney when it was called for trial in criminal court, March 23. Dr. Catania graduated in 1930 from Loyola University School of Medicine and was licensed in Illinois the same year.

**Personal**—Dr. Ernest E. Irons, dean, Rush Medical College, has been appointed chairman of the department of medicine succeeding Dr. George F. Dick. Dr. Dick continues as professor in the department of medicine at the college and as professor and chairman of the department of medicine in the Division of Biological Sciences, University of Chicago. Dr. William P. MacCracken, senior medical examiner for the aeronautics branch of the U. S. Department of Commerce in

this area, has been appointed medical director of the American Air Races to be held at the Chicago airport, July 1-4

**Society News**—"Influence of the Pituitary Gland on Metabolism" was discussed at the meeting of the recently organized Endocrine Club, April 18, speakers were Dr Hugo R. Rony and Broda O. Barnes, Ph.D.—Dr Arthur C. Christie, Washington, D. C. addressed the Chicago Roentgen Society, April 20, on 'Relation of the Medical Profession to the Costs of Medical Care'—Dr Janet S. Barnes, Ann Arbor addressed the Chicago Council of Medical Women May 5, on 'Problem Parents of the So Called Problem Children'—Speakers before the Chicago Pathological Society May 8 included Drs Victor Levine on 'Chronic Embolism of the Lungs', William R. Williams, Riverside Ill., 'Experimental Studies of the Effects of Lung Compression on the Pulmonary Circulation', and Perry J. Melnick 'Theca Cell Tumors of the Ovary'—Dr Edward A. Bullard, New York, among others, addressed the Chicago Gynecological Society, May 19, on 'Cervicitis and Its Operative Treatment'

## INDIANA

**Society News**—At a meeting of the Fifth District Medical Society in Terre Haute May 5 polio myelitis was discussed by Drs William H. Allen, Virgil E. Simpson, James H. Pritchett and Frank P. Strickler, all of Louisville, Ky.—Dr Joseph H. Weinstein, Terre Haute, talked on medical economics before the Bartholomew County Medical Society at Columbus, May 3—The Tippecanoe County Medical Society was addressed by Dr John Sundwall, Ann Arbor, Mich., on 'Social Trends in Medical Practice' and Critical Age of Forty—Dr Granville S. Hanes, Louisville, conducted a rectal clinic before the Ripley County Medical Society in Osgood May 10—A symposium on the education of the public in medical matters was presented before the Indianapolis Medical Society May 16, the speakers were Drs Thurman B. Rice, James H. Stygall, John A. MacDonald and William N. Wishard, Sr—Dr Olin West, Chicago, secretary and general manager of the American Medical Association, addressed the St. Joseph County Medical Society in South Bend, April 26, on medical economics

## IOWA

**Society News**—Dr Benjamin F. Wolverton, Cedar Rapids, was elected president of the Iowa Clinical Medical Society at its spring meeting April 13—Dr Augustus G. Pohlman, Vermilion, addressed the section on ophthalmology of the Des Moines Academy of Medicine and the Polk County Medical Society, April 17, on 'Difference Between the Visualized and Audiotized Interpretations of the Hearing Apparatus and Their Relation to the Prevention and Treatment of Deafness'

**Inter-Professional Association.**—The O'Brien County Inter-Professional Association was recently organized according to the *Journal of the Iowa State Medical Society*, to protect the public health from jeopardy by unskilled, poorly trained and otherwise incompetent persons. The new organization will also concern itself with all public health problems, including vaccination for contagious diseases, prevention and control of epidemics, and testing of milk cattle herds. Membership comprises fifty-five physicians, dentists, druggists, veterinarians and nurses. The society will meet quarterly.

## KENTUCKY

**Society News**—Drs Emmet F. Horne and Morris M. Weiss addressed the Jefferson County Medical Society, Louisville May 15, on 'Etiological Incidence of Heart Disease in Kentucky'—Dr Max Cutler, Chicago, addressed the society, April 17, on 'Relation of Chronic Mastitis, Cysts and Papilloma to Carcinoma of the Breast. Demonstration of Tumors of the Breast by Transillumination'—Dr L. Wallace Frank, Louisville, addressed the Christian County Medical Society, Hopkinsville March 21, on cancer of the breast.

## MAINE

**Society News**—At a meeting of the Androscoggin Medical Society, April 14, Dr George E. Young, Skowhegan, gave an illustrated address on chest surgery and surgical treatment of tuberculosis of the lungs—The Cumberland County Medical Society was recently addressed by Dr Eric M. Matsner, New York, on 'Technic of Contraception'—Dr Thomas A. Foster discussed 'Rheumatic Fever' before the Portland Medical Club April 4—A recent meeting of the Penobscot County Medical Association was addressed by Drs Harry Butler and Magnus F. Ridlon, Bangor, among others, on 'Sinus Disease and General Diagnosis' and 'Dehydration Treatment of Eclampsia' respectively

## MASSACHUSETTS

**Society News**—Dr Zabdial B. Adams, Boston, addressed the New England Roentgen Ray Society, April 21, on 'Early Appearance and End-Results of Skeletal Tuberculosis'—Among others, Dr Alice Ettinger, Berlin, Germany, addressed a joint meeting of the Greater Boston Medical Society and the Beth Israel Hospital, April 18, on 'X-Ray Studies of the Gastro-Intestinal Mucosa: Diagnostic Value'—Dr Howard W. Haggard, New Haven, Conn., addressed the Worcester District Medical Society in Rutland April 12 on 'Charlatainism'—At a meeting of the South End Medical Club in Boston April 18, Dr William P. Boardman spoke on syphilis

**Public Health Lectures**—An institute of public health was begun in Roxbury April 24 under the auspices of the Boston Health Department. On this day Drs Wilson G. Smilie spoke on 'The Physician and Public Health', Thomas R. Goethals, 'Obstetrics: Prenatal Care,' and Alonzo K. Paine, 'Delivery and Postpartum Care.' Subsequent lectures were as follows:

Drs Richard M. Smith and Harold C. Stuart, 'The Infant and Child: Normal Development, Health Supervision, Prevention of Disease' April 26 and 28  
Dr Edwin H. Place, 'Methods for the Control of Specific Diseases' May 1  
Dr Cleaveland Floyd, 'Prevention and Control of Tuberculosis' May 1  
Dr William H. Robey, 'Extension of Preventive Measures in Adult Life' May 3  
Clair E. Turner, 'Dr. P. H. Health Education' May 5  
Dr Charles F. Wilensky, 'Relationships Between Health Departments and the Medical Profession' May 5

## MICHIGAN

**Bills Introduced**—H. 580, to amend the narcotic drug act, proposes to eliminate the provision which requires that exempted preparations of narcotic drugs contain some drug adapted in quantity and quality to prevent the use of the exempted preparation for gratification of narcotic addiction. H. 622 to amend the workmen's compensation act, proposes to increase from 90 to 180 days the period after an industrial injury during which an employer must furnish medical, surgical and hospital services and medicines to an injured employee.

**Report on Survey of Michigan Medical and Health Agencies**—The secretary of the Michigan State Medical Society, Dr Frederick C. Warnshuis, Grand Rapids, informs *THE JOURNAL* that a complete report of the great survey of medical and health agencies in the state of Michigan which has been in process of development for more than a year will be available early in June. The report is exceedingly comprehensive and includes some thirty pages of summary and forty pages of conclusions. Those who desire a copy of this report may secure one by writing directly to the Secretary of the Michigan State Medical Society, the cost of the publication being \$2.50 per copy. There are to be 250 pages in the report exclusive of tables, maps and charts.

**Plan to Care for Middle Class**—Complete diagnostic facilities will be available to every worthy patient at a cost directly proportionate to his ability to pay, through a plan evolved by the Wayne County Medical Society to provide medical care for the middle class. In addition, the project offers the advantages of a well organized type of group practice, free choice of physician and the preservation of the present fundamentals of medical practice. The society will become an active staff caring for patients in this class, its headquarters serving as a coordinating center for those who need but cannot afford complete diagnostic service at customary rates. Forms will be used to determine the percentage ability to pay, so that an equitable basis may be furnished each physician, x-ray or clinical laboratory to make charges. Patients who apply at the headquarters are to be referred to a general practitioner or family physician listed in a directory made up of the society's members.

## MISSOURI

**Trudeau Lecture**—Dr Allen Krause, Tucson, Ariz., gave the annual Trudeau Lecture before a joint meeting of the St. Louis Trudeau Club and the St. Louis Medical Society April 25. His subject was 'The Principles of Activity in Pulmonary Tuberculosis.' The lecture is sponsored by the Trudeau Club.

**Gift to Medical School**—Presentation of 1,250 copies of *THE JOURNAL* was recently made to Washington University School of Medicine, St. Louis, by Dr Charles S. Austin, Carrollton, an alumnus. In addition to these journals, which date from 1909, a number of old medical volumes, going as far back as 1838, were included. The latter were a part of the medical library of Dr. Austin's grandfather, Dr. John S. Williams, said to have been the first physician to locate in Chillicothe.

**Library in New Quarters**—The library of the Jackson County Medical Society has been moved from the Medical Arts Building in Kansas City to the second floor of the Kansas City General Hospital. The nucleus of the library, which was assembled by the Kansas City Medical Club, consisted of books and journals belonging to Dr Arthur E Hertzler. In 1921, the Jackson County Medical Society took over the library. From its inception in 1911 to 1921, the library was housed in the Rialto Building from 1921 to 1925 it occupied quarters at the Kansas City General Hospital and from 1929 through 1932 it was in the Medical Arts Building. In 1932, 7,562 persons used the library, as compared with 897 in 1914.

## NEBRASKA

**Change in State Health Department**—Under new legislation effective April 1, the State of Nebraska Department of Health replaced the former Department of Public Welfare. Dr Philip H Bartholomew is now director of health.

**Society News**—Members of the staff of University Hospital presented the program of the Omaha-Douglas County Medical Society, Omaha, April 11, as follows: Drs Manuel Grodinsky, "Experimental and Clinical Studies of Spinal Anesthesia", Alfred J Brown "Pentacaine as a Spinal Anesthetic", Olin J Cameron "Self-Induced Lesions of Skin," and Ernest L MacQuiddy, "Air Conditioning".—Drs John C Thompson and Clarence C Hickman, Lincoln addressed the March meeting of the Otoe County Medical Society, Nebraska City, on "Arthritis with Reference to Treatment with Crowe's Vaccine" and "Tumors of the Colon with Special Reference to Multiple Polyposis," respectively.

## NEW HAMPSHIRE

**Personal**—At a recent special election, Dr George W Nutter, Salmon Falls who is 75 years old was elected representative to the state legislature, succeeding the late Gardner Grant. Dr Nutter has served four previous terms in the legislature.

**Society News**—At a recent meeting of the Carroll County Medical Society in Wolfeboro, Drs John S Wheeler Wolfeboro, and Harry O Chesley, Dover president of the state medical society spoke on "Complications of Influenza" and "Problems of Organized Medicine," respectively. Motion pictures on "Traumatic Surgery of the Extremities" were also shown at this meeting.

## NEW YORK

**Care of the Indigent in Buffalo**—Under a plan recently evolved by the committee on medical economics of the Erie County Medical Society and representatives of the hospitals and social agencies of Buffalo, free or part pay clinics investigate the financial status of those who apply for treatment and refer them back to private physicians. The physicians may then accept them as free or part pay patients or send them back to the clinic. In acute conditions, treatment will be given immediately however.

**Typhoid Carriers in 1932**—Six hundred and twenty typhoid carriers were registered by the New York State and New York City departments of health at the end of 1932 an increase of 61 over the previous year. Of this number 311 were in New York City, 290 in the state outside New York City, and 19 in state institutions. Only eight carriers who were under supervision of the state health department Jan 1 1932, are known to have caused cases in 1932. Of twenty cases traced to these carriers eleven are known to be due to one carrier who handled food at a party despite the fact that she had been warned of the danger of infecting other persons.

### New York City

**Hospital News**—Alumni Day was observed at the Hospital for Joint Diseases, May 3. Operative clinics were held in the morning followed by demonstrations of the use of filtered ultra-violet radiation in the operating room and pathologic specimens of intervertebral disks and sacro-iliac joints. A dry clinic was held in the afternoon, after which Dr Emanuel Libman presented a paper on "Diagnostic Observations on Some Abdominal Diseases" and Dr Edgar M Bick on "Present Trends in Orthopedic Surgery in Light of Its Past History."

**Columbia University News**—Columbia University College of Physicians and Surgeons has announced the appointment of Howard B Adelmann PhD, as assistant professor of anatomy. Dr Richard F Thompson assistant professor of bacteriology, and Dr Karl Meyer, assistant professor of biologic chemistry. Dr Meyer received his medical degree at the University of Cologne, Germany, and has recently been at the University of California.—The alumni association of the

college held its annual dinner, March 29, in Bard Hall, with Dr Bern B Gallaudet, associate professor of anatomy, as guest of honor.—A fund to establish the Herbert Swift Carter Lectureship in Diseases of the Digestive Tract has been set aside to commemorate the life and work of the late Dr Carter, for many years a member of the Columbia faculty.

**Honorary Fellows Elected**—Thirteen physicians and research workers have recently been elected to honorary fellowship in the New York Academy of Medicine, as follows:

Dr James B Herrick, emeritus professor of medicine Rush Medical College Chicago  
Dr George R Minot professor of medicine Harvard University Medical School Boston  
Dr William Gibson Spiller professor of neurology University of Pennsylvania School of Medicine Philadelphia  
Dr Frederick G Banting professor of medical research University of Toronto Ontario  
Prof Charles Achard Faculté de médecine Paris  
Dr Roberto Alessandri director of surgical clinic, University of Rome.  
Sir Charles Ballance consulting physician St. Thomas Hospital National Hospital for Paralysis and Epilepsy London  
Sir Henry H Dale director National Institute for Medical Research London  
Otto Foerster professor of psychiatry and neurology University of Breslau Germany  
Carl Gustaf Forssell professor of radiology Medico-Chirurgisk Institute Stockholm Sweden  
Cornelius Ubbo Ariens Kappers professor of comparative anatomy of the nervous system University of Amsterdam.  
Alfred Vogt professor of ophthalmology University of Zurich Switzerland.  
Karel Frederik Wenckebach, for many years professor of medical pathology and therapy University of Vienna.

## NORTH CAROLINA

**State Medical Election.**—Dr Paul P McCain Sana torium, was chosen president-elect of the North Carolina State Medical Society at the annual meeting in Raleigh in April. Dr Isaac H Manning Chapel Hill, was installed as president. At a joint meeting of the society with the state board of health, Drs William T Rainey, Fayetteville, and Sylvester D Craig Winston-Salem, were elected to the board. Pinehurst was designated as the place for the next annual session, May 30 June 2, 1934. Dr L B McBrayer, Southern Pines, is secretary of the society.

## OHIO

**Personal**—Dr and Mrs Charles Huber, Harrison, celebrated their golden wedding anniversary, April 17.—Dr J Eugene Baker, Marion, was recently guest of honor at a special meeting conducted by his Sunday school class celebrating his fiftieth anniversary in the practice of medicine. Members of the Marion Academy of Medicine were guests.—Dr Jerome Gross Cleveland, gave a violin recital in the auditorium of the Cleveland Medical Library May 2.—Dr Aaron H Smith recently assumed the superintendency of Pleasant View Sana torium Amherst.—Dr Emerson Paul Shepard, formerly of Columbus, has been named president of the American Medical Association in Vienna, according to the Quincy (Ill.) Medical Bulletin. Dr Shepard is studying in Vienna.

**Appointments at Cincinnati**—The board of trustees of the University of Cincinnati School of Medicine recently announced the following appointments and promotions:

Dr Emerson A. North professor and head of the department of psychiatry  
Dr Frank M. Coppock Jr. head of the department of gynecology  
Dr Maurice Levine assistant professor of psychiatry  
Dr Gustav Eckstein Jr. assistant professor of physiology  
Dr Franz H. Miketta associate professor in obstetrics  
Drs Daniel J. Davies and Robert L. Crudginton assistant professors of obstetrics  
Dr Helena T. Ratterman assistant clinical professor  
Drs Thaddeus R. Gillespie and William P. Gillespie instructors in obstetrics  
Dr James M. Pierce instructor in obstetrics.  
Drs Lloyd B. Johnston and Francis M. Oxley instructor in clinical surgery  
Dr Jean M. Stevenson assistant in surgery

## PENNSYLVANIA

**Society News**—Drs Bernard J McCloskey and Horace B Anderson Johnstown, addressed the Cambria County Medical Society, May 11, on heart disease and Lycurgus M Gurley, Johnstown presented a review of research in ophthalmology.—Drs John P Harley and Charles L Youngman Williamsport discussed medical economics and blood transfusion, respectively, at a meeting of the Tioga County Medical Society, April 21.—Dr Norris W Vaux Philadelphia, was the speaker at a meeting of the Delaware County Medical Society, Chester, May 11 on advances in teaching and practice of obstetrics. At a joint meeting with the dentists of Delaware County in March the society heard addresses by Dr Chevalier Jackson, on "Bronchoscopic and Esophagoscopy Cases of

Interest, James R. Cameron DDS cooperation between medicine and dentistry, Dr Seth A. Brumm, the economic situation in medicine, and E. Fullerton Cooke Pharm D, public health service of the pharmacist. All were from Philadelphia. —Dr Ralph M. Tyson, Philadelphia addressed the Dauphin County Medical Society Harrisburg May 2 on preventive pediatrics for the general practitioner. —Dr Adam C. Williamson, Pittsburgh addressed the Washington County Medical Society, Washington, May 10 on Temperatures and Complications of the Puerperium. —Dr Wallace S. Duncan Cleveland addressed the Fayette County Medical Society, May 4 on 'Post-Traumatic Back Pain in Relation to Compensation'. —Drs Hubert A. Royster, Raleigh N. C. and William D. Reid, Boston, were guests of the Lycoming County Medical Society at its annual spring clinic meeting at Williamsport May 12. Dr Reid discussed diagnosis and prognosis of heart disease and Dr Royster various aspects of appendicitis.

#### Philadelphia

**Society News** —Dr Max M. Strumia among others addressed the Pathological Society of Philadelphia, May 11 on 'Agranulocytosis and Acute Leukemia'. —Drs Samuel Goldberg and Nathan M. Levin among others, addressed the Philadelphia Pediatric Society May 9, on Pediatric Studies of Pulmonary Suppuration and Foreign Bodies.

**Portrait Presented to Jefferson** —The class of 1933 at Jefferson Medical College presented to the college a portrait of the late Dr Elmer H. Funk, who was professor of therapeutics. Dr Thomas McCrae made the presentation on behalf of the class, April 6 and the portrait was accepted by Alba B. Johnson, chairman of the board of trustees. Dr Funk was medical director of Jefferson Hospital during the absence of Dr Henry K. Mohler in war service and later became professor of diseases of the chest.

**Demonstrations on Heart Disease** —The Philadelphia Heart Association presented intensive demonstrations of the latest methods of diagnosis and treatment of heart disease, May 15-18. About thirty-five physicians participated in the demonstrations, which were held at Pennsylvania Hospital, Temple University Medical School Hospital and the Medical Clinic of the University of Pennsylvania, Jefferson Medical College Hospital, the pathology laboratory of the University of Pennsylvania School of Medicine and the Philadelphia General Hospital.

#### RHODE ISLAND

**State Medical Meeting, June 1** —The annual meeting of the Rhode Island Medical Society will be held in Providence June 1, under the presidency of Dr Norman Darrell Harvey, Providence. The program is as follows:

Dr Lyman G. Richards Boston Acute Tracheobronchitis in Children.  
Dr Max J. Exner New York Congenital Syphilis.  
Dr Ralph Pemberton Philadelphia Arthritis.  
Dr Henry W. Hudson Jr Boston Abdominal Emergencies in Infancy and Childhood.  
Dr Marshall N. Fulton Boston Use of Diuretics in the Treatment of Renal and Cardiac Eczema.  
Dr Clifton B. Leech Providence Complete Heart Block in Young People.  
Dr Frederic V. Hussey Providence Surgical Risks and Postoperative Complications of Diseases of the Biliary Tract.  
Dr Harold F. Corson Providence, Diagnosis and Treatment of Children Thought to Have Epilepsy.

The annual dinner will be held at the Squantum Club with Richard Washburn Child, Newport, former ambassador to Italy, as speaker.

#### SOUTH DAKOTA

**Society News** —The Aberdeen District Medical Society held its quarterly meeting, April 11 with the following speakers on the program: Drs Nelson W. Barker, Rochester Minn. on "Differential Diagnosis and Treatment of Vascular Diseases of the Extremities," Carl W. Forsberg Sioux Falls, Practical Laboratory Tests and Their Interpretation, and Maksymilian R. Gelber, Britton, Avertin and Spinal Anesthesia. —Dr Oliver J. Fay, Des Moines, Iowa, addressed the Yankton District Medical Society Vermillion April 28 on the reports of the Committee on the Costs of Medical Care.

#### TEXAS

**Public Health Forum in Fort Worth** —The Tarrant County Medical Society during the past year established an open forum for the public for the discussion of physical and mental hygiene. Meetings are held weekly at the auditorium of the society, and the interest has grown so that the hall is inadequate, according to a report in the *Texas State Journal of Medicine*. A member of the society makes a talk each week and allows time for questions and answers. Among speakers

have been Drs Arthur H. Fleckwir, on rabies, Edwin G. Schwarz, prevention of infectious diseases in children, Marquis E. Gilmore blood pressure, William S. Barcus, diabetes, and Jack McLean acute abdominal conditions.

**Society News** —Drs James H. Black and Julia Florence Widney Austin, Dallas, among others, addressed the Dallas County Medical Society, April 13 on 'Blood Sugar in Allergic Persons' and 'High Blood Pressure and Hypothyroidism,' respectively. Among speakers at the meeting were Drs Curtice Rosser and George T. Caldwell Dallas on 'Venereal Diseases Affecting the Rectum' and Neoplasms of Reticulo-Endothelial Origin' respectively. —The Texas Club of Internists held its spring meeting in Fort Worth, March 3-4, with Dr Allen K. Krause, Tucson, Ariz., as guest. Dr Krause made an address on 'Tuberculosis a Generalized Infection'. Dr William E. Nesbit San Antonio, was elected president. —The Northwest Texas District Medical Society met in Mineral Wells, March 7, among speakers were Drs Everett C. Fox, Dallas, on 'Treatment of Skin Cancer' and Arthur C. Scott Temple, 'What the Public Should Know About Cancer'. —Dr Roy L. Vineyard Amarillo, was chosen president elect of the Panhandle District Medical Society at its spring meeting in Amarillo, April 12. Among the speakers were Drs Alfred I. Folsom, Dallas, on prostatic resection, Thomas E. Carmody, Denver, sinus infections and Albert O. Singleton, Galveston, surgery of the heart. The fall meeting will be held in Plainview.

#### VIRGINIA

**Society News** —Dr Harold L. Amoss, Durham N. C. was the guest speaker at the annual all day clinic of the Norfolk County Medical Society Norfolk, April 12. Dr Amoss spoke on 'Treatment of Streptococcal Pneumonia'. —Drs Samuel J. Kopetzky, New York, and Thomas D. Allen, Chicago, addressed the Virginia Society of Otolaryngology and Ophthalmology at the annual meeting in Harrisonburg, May 6, on 'Problems Concerned with Petrositis' and 'Dissecting Blebs Following Fistulization Operations,' respectively.

**University News** —Courses will be offered at the University of Virginia department of medicine, June 19-July 29, in histology, embryology, anatomy, biochemistry, physiology, medical bacteriology, pathology, pharmacology and mental hygiene. —Clinics in pediatrics, obstetrics, surgery and medicine were presented for practicing physicians, March 22-23, at the Medical College of Virginia, Richmond. Instructors were Drs Samuel A. Anderson, Jr., Lee E. Sutton, Jr., Fred J. Wampler, Harry H. Ware, Jr., Greer Baughman, Isaac A. Bigger, Donald M. Faulkner, George Paul La Roque, Claude C. Coleman, Manfred Call, James H. Smith, William A. Shepherd, William H. Higgins and James M. Hutcheson.

#### WASHINGTON

**Personal** —Dr Albert E. Stuht, Seattle, has resigned as state health commissioner of the Washington State Board of Health after serving for eight years. Dr Austin U. Simpson, assistant director of health, will be in charge of the department until a new director has been appointed.

#### WEST VIRGINIA

**Bill Passed** —H. 98 has passed the house, proposing to require the physical examination of all children at the time they enter public or private schools for the first time to determine the presence of communicable diseases or defects. Children found suffering from any communicable disease in an acute or infectious stage are to be barred from school.

**Acting Health Commissioner Appointed** —Dr David Littlejohn, director of rural sanitation in the state health department since 1927, has been appointed acting head of the department to succeed Dr William T. Henshaw, resigned. Dr Littlejohn served as health officer of Bluefield for several years and had previously been health officer of various towns in the Middle West. He is president of the West Virginia Public Health Association.

**Society News** —Dr Stuart McGuire, Richmond, addressed the Kanawha Medical Society, Charleston April 11, on 'Cancer of the Breast'. —A meeting of the Wyoming County Medical Society Mullens March 28, was devoted to discussion of the West Virginia compensation law. —At a joint meeting of the Cabell County Medical Society and the Parkersburg Academy of Medicine in Huntington April 13, Drs Oliver D. Barker and William R. Goff, Parkersburg, discussed urologic cases and hypothyroidism. —Dr Harry McGrath, Montgomery, addressed the Fayette County Medical Society, Montgomery, April 12 on 'Relation of the Paranasal Sinuses to Systemic Disease'. —At the quarterly meeting of the Central Tri-State

Medical Society, Huntington, May 18 speakers were Drs Philip F Barbour, Louisville, Ky, on 'The Cost of Medical Care', Clyde M Fitch, Portsmouth Ohio, Effectiveness of Mercury as a Diuretic', Wade H St Clair, Bluefield 'Review of Gallbladder Surgery', William A MacMillan, Charleston, W Va, 'Intestinal Obstruction' and William S Fulton Wheeling, W Va., 'The Hundredth Case'—Dr P Brooke Bland Philadelphia addressed the Ohio County Medical Society, Wheeling, April 28 on "Prevention of Maternal Mortality from Puerperal Hemorrhage"

### WISCONSIN

**Bill Introduced**—Substitute Amendment No 1 to A 589 proposes to create a board of chiropractic examiners and to regulate the practice of chiropractic. Licentiatees are to be permitted to practice "chiropractic" which the bill does not define, to make and sign birth and death certificates, to render the medical care which employers are required under the workmen's compensation act to furnish their injured employees and to use the title 'doctor' if the designation 'doctor of chiropractic' or the abbreviation 'D C' appears following the name of the licensee

### WYOMING

**County Health Officers**—The state board of health, the Casper Herald reports has recently assigned county health officers as follows

Albany Dr Richard M Leake.	Natrona Dr Joseph C Kamp
Big Horn Dr Stanley J Myre.	Niobrara Dr Guy D Murphy
Campbell, Dr J C McHenry	Park Dr Frances M Lane
Carbon Dr Charles W Jeffrey	Platte, Dr Charles E Fish
Converse Dr Joseph R Hytton	Sheridan Dr E E Whedon
Crook, Dr John L Bostwick	Sublette Dr John W Montrose.
Fremont Dr Paul R Holtz	Sweetwater Dr E S Lauzer
Goshen Dr Orville C Reed	Teton Dr Charles W Huff
Hot Springs Dr Robert W Hale.	Uinta Dr Josiah H Holland
Johnson Dr Walter J Knebel	Washakie Dr Paul S Read.
Laramie Dr George M Anderson	Weston Dr Fred Horton
Lincoln Dr John R Newnam	

### GENERAL

**Decrease in Smallpox.**—Comparison of the number of cases of smallpox reported for the years 1928 to 1932 inclusive, shows the most notable decrease of any disease reported to the U S Public Health Service in that period. In 1932 there were 11,168 cases, compared with 39,396 in 1928. Figures for the intervening years are 1929, 42,282, 1930, 48,907, and 1931, 30,232

**Medical Information During Century of Progress**—The committee of the Chicago Medical Society for the Century of Progress is arranging a booklet on medical information about Chicago, which will include a list of fixed clinics in hospitals and medical schools. The committee will supply visiting physicians with information at its bureau of information and booth, K-15 ramp, in the Hall of Science. The wives and daughters of physicians will also be assisted at this booth by the woman's auxiliary of the Chicago Medical Society. Dr Hugh N MacKechnie is chairman of the committee

**Hotel Physicians Organize**—A number of physicians associated with large hotels in Chicago recently organized the Hotel Physicians Association of America with the following officers: Dr Maurice W Samuels, president; Lee H Kiel, vice president, and Joseph N Blake secretary. All of Chicago. Purposes of the association are to raise and maintain the standard of practice in hotels, to protect the health and welfare of the traveling public, to establish a medium of exchange of information among hotel physicians and to keep unethical practitioners out of hotels. It is planned to extend the organization gradually to hotel physicians throughout the country. Applicants for membership must be graduates of class A schools of medicine and members of the American Medical Association in good standing

**Delegates to Congress on Military Medicine**—The U S Department of State announces that at the invitation of the Spanish government delegates to the Seventh International Congress of Military Medicine and Pharmacy at Madrid May 29-June 4 will be as follows

Dr John McMullen of the U S Public Health Service now stationed in Paris
Col Harold D Corbuser Medical Reserve U S Army Plainfield N J
Lieut Col Francis E Fronczak Medical Reserve U S Army Buffalo
Commander William Seaman Bainbridge Medical Reserve U S Navy
Major Edgar E Hume Medical Corps U S Army Army Medical Museum Washington, D C
Lieut Com Julius F Neuberger U S Naval Hospital Newport R I

Medical Director McMullen and Lieutenant Commander Neuberger will represent the United States at the International Congress on Sanitary Aviation, to be held concurrently

**News of Epidemics**—An outbreak of forty-three cases of smallpox was reported from Lowellville Ohio, during March. About 1,500 persons were vaccinated—A case of smallpox in a visitor to Barney, Ga, in March resulted in wholesale vaccination of citizens of Quitman and Brooks counties—An outbreak of typhoid at Banner Lk N C, in April, was traced to a contaminated water supply—Mumps was reported to be epidemic in Waterloo, Iowa 119 cases having been noted during March—Seven rural schools were closed and public gatherings were banned in several townships in Portage County, Ohio because of a serious outbreak of scarlet fever in March and April. Epidemics were also recently reported from Akron, Ohio, Alpena, Mich, and Arlington Wis—In Toledo, Ohio, 1,172 cases of measles were reported between April 1 and 24. In Dallas Texas, 529 new cases were reported during the last week of March—Six cases of diphtheria with one death, were reported from the village of San Mateo N M, April 10

**Impostor Uses Physicians' Names**—Dr Paul K. Shirk, Yonkers N Y, reports the activities of a man who is obtaining money pretending to be a physician. He appeared at Dr Shirk's office, March 15, claiming to be Dr Malachi W Sloan, Jr and giving his address as Tyrone, Pa, and the name of Dr William Hermanutz, supposedly also of Tyrone, as reference. Investigation revealed that Dr Sloan and Dr Hermanutz do not live in Tyrone. About April 1 the same man appeared at Jefferson Medical College, Philadelphia, calling himself Dr Sloan and using the names of Dr Edward J Wagner, New York, and Dr Shirk as references to borrow money from a student. The impostor is said to be about 25 years old 5 feet 6 inches tall, and clean shaven with light brown hair and gray or blue eyes. According to Dr Shirk, he dresses cheaply and his grammar is poor. He claims however to be a graduate of Northwestern University Medical College Chicago. He appears to know many Jefferson graduates and has sufficient knowledge of medical phraseology to carry him through a general conversation

**Society News**—The American Laryngological, Rhinological and Otological Society will hold its annual meeting in Chicago June 8-10 at the Lake Shore Athletic Club under the presidency of Dr Joseph C Beck, Chicago. Members of the medical profession are cordially invited to attend. For all other information write Miss Margaret Wolf Room 2009 25 East Washington Street Chicago. Telephone Randolph 0244—The American College of Physicians announces that its eighteenth annual clinical session will be held in Chicago April 16-20, 1934. Mr C R Loveland executive secretary, 133-135 South Thirty-Sixth Street Philadelphia is in charge of general arrangements—The National Research Council recently awarded eighteen fellowships in medicine for study in the United States and Europe. Applications to be placed before the fall meeting of the Medical Fellowship Board should be filed with the Washington office before August 1—The Great Northern Railway Surgeons Association will hold its annual meeting in Portland Ore, June 19-20. Speakers will include Drs Charles W Burns Winnipeg, Manit, on "Traumatic Rupture of Spleen", Paul O Neraal Cut Bank, Mont Treatment of Supracondylar Fractures of the Humerus" and Roscoe C Webb, Minneapolis 'Application of First Aid Splints to Fractures of the Upper and Lower Extremity'

**Sectional Meetings on Physical Therapy**—The eastern section of the American Congress of Physical Therapy met in Philadelphia May 6 with the following speakers, among others

Dr Madge C L McGuinness New York, Physical Therapy in Gynecology
Dr Richard Kovacs New York Recent Problems in the Interpretation of the Physiologic Changes in Arthritis and Their Treatment by Physical Therapeutic Measures
Delle W Bronk Ph D Philadelphia Biophysics and the Future of Physical Therapy
Dr Frank H Krusen Philadelphia Therapeutic Light Sources and Their Physiologic Action

The midwestern section of the congress held its spring session in Peoria Ill May 15. Among speakers were

Dr Frank H Ewerhardt St Louis Treatment of Flaccid Paralysis
Dr Disraeli W Kolah Chicago Effect of Ultraviolet in Sacro-Iliac Arthritis Associated with Sciatic Pain
Dr Frederick L Wahrer, Marshalltown Iowa Electrosurgery in Relation to the Tonsil Problem
Dr John Stanley Coulter Chicago Evaluation of Physical Measures in Arthritis

The western section met in Del Monte Calif April 23, and presented a program including the following speakers

Dr William J Kerr, San Francisco Treatment of Raynaud's Disease.
Dr William W Worster San Gabriel Calif Use and Abuse of Colonic Therapy
Dr Norman N Epstein San Francisco Treatment of Syphilis with Hyperpyrexia Produced by Diathermy
Dr John Severy Hibben Pasadena Physical Agents in the Treatment of Pneumonia.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

April 29, 1933

#### The British Medical Association and the London County Council

The trouble between the British Medical Association and the London County Council over the appointment of consultants and specialists to the council's hospitals, reported in previous letters is not the only one. The reorganizing activities of the council, which is the largest employer of physicians in the world and has only recently acquired so much power by taking over the duties of all the public health authorities of the metropolis, were bound to bring it up against the association. The council now proposes to adopt a uniform scale of charges for the treatment of outpatients, including casualties, accidents and other emergencies. But the objection is made that this encroaches on the work of the voluntary hospitals and is a direct challenge to the private physician. The new scale of charges includes the following: (1) medical and surgical, consultations and treatment, including massage and electrical treatment, 36 cents for an attendance, (2) dental attendances, provided treatment is actually given and excluding attendance for the provision and fitting of dentures 36 cents for an attendance, (3) roentgen examinations from \$2 to \$7, with 50 cents for each additional film taken at the same sitting or for a film taken away. No charges are to be made for examination after former inpatient treatment, for antenatal and postnatal attendances, or for first attendances, except for roentgen examination. The attitude of the British Medical Association is that any incursion by the London County Council into ordinary outpatient activity comparable with the outpatient work of the voluntary hospitals would gravely endanger the position of the private physician, unless the patients were seen only on the recommendation of their own individual physician. The British Medical Association has recently introduced a model form for use by the physician in sending his patients to a hospital, either voluntary or municipal.

#### The Defects of the Modern Dietary

Dr Chalmers Watson, senior physician of the Edinburgh Royal Infirmary, delivered a lecture to the Glasgow and West of Scotland College of Domestic Science on defects of the national diet. He said that while in the past forty years the health of the nation had materially improved in some directions through improved hygiene in other directions, such as the increasing incidence of dental disease increasing maternal morbidity, the prevalence of tonsils and adenoids, appendicitis and allied abdominal conditions and the increased incidence of cancer, the reverse was true. There was an increasing tendency to associate these results with the changes that had taken place in the feeding habits of the people during that period. These changes were a departure from the use of fresh natural foods, reliance being placed on substitutes regarded as just as good. But though in themselves wholesome, these substitutes lacked to a greater or lesser degree the vital properties included under the general term vitamins which were present in fresh food. In response to the popular demand for white bread, the miller removed the most nutritious element in the wheat grain. The bulk of the milk supply had its nutritive value materially lessened by pasteurization. The natural sugar present in vegetables and fruit was replaced by an extracted and overrefined product lacking the properties of natural sugar. In general overuse was made of artificially preserved foods. He considered that the public would be ill advised if it looked to the addition to the diet of artificially prepared vitamin

preparations as a solution for the deficiency. Diet should be, so far as possible, selected from good fresh untreated milk, butter, oatmeal a daily supply of fresh fruit, vegetables, eggs, fish and home-grown meat food.

#### Reorganization of Irish Hospitals on the Basis of the Sweepstake Fund

The immense sums derived by the hospitals of the Irish Free State from the gambling spirit of the world, mentioned in previous letters, have given rise to special legislation in the dail. A bill has been introduced by Dr Ward, parliamentary secretary to the ministry for local government and public health. In 1931 a commission was appointed by the minister of justice to report on the division of the sweepstake monies between the hospitals. Many of them showed a lack of appreciation of the proper lines of development for the country's needs. The single anxiety of the majority was to obtain the largest possible award from the sweepstake funds. Building programs were in most cases hastily considered. Too many institutions specialized along the same lines, to the neglect of curative medicine. The minister would control the reorganization of the scheme as a whole. The bill would establish a hospitals commission with power to survey the existing hospital facilities and consider every application for a grant. In future medical research, institutions would be included in the sweepstake list.

### PARIS

(From Our Regular Correspondent)

April 12, 1933

#### The Rights and Duties of the Surgeon

The Society of Legal Medicine discussed recently the subject "If a surgeon, during the course of an operation, discovers a lesion that he had not diagnosed previous to the operation, and that the patient did not know existed has he the right, as the representative of the patient's interests, to perform a more complete intervention than he had planned?" In some instances patients, following an operation more mutilating than that to which they had agreed, have sued the surgeon for damages, and, in spite of the fact that health was restored, have won the suit. In principle, a surgeon has the right to perform only the operation concerning which a formal agreement was entered into with his patient, for the consent of a patient to an operation is absolutely necessary, by virtue of the principle that every person is the sole arbiter in matters affecting his own body. When, however, the patient is under anesthesia, it is impossible to interrupt the operation and to revive the patient in order to ask him his opinion. The courts have admitted that the surgeon may be content to accept the opinion of the husband in a matter involving a more extensive operation on the wife. Recently, the court of Lannion refused to allow a woman her claim for damages in the case of a surgeon who had operated on her for a tumor of the breast, although he had stated that the tumor was benign and would require only a simple excision. During the operation however, he discovered that the tumor was a cancer. After securing the consent of the husband, he removed the entire breast and likewise excised glands in the axilla. The patient recovered but demanded 200 000 francs (\$8 000) by way of damages. The court denied the claim. The courts are less inclined to admit that the consent of the wife is valid when the husband is under an anesthetic, for she is not so good a judge of a possible diminution of capacity that might result from a more mutilating operation on her husband. Then, again the husband may be absent, and the patient, brought in an emergency to the hospital may be alone. The medicolegalists at the meeting expressed the view that the condition of absolute necessity absolved the surgeon from all blame, even if the operation proved fatal or caused an unforeseen mutilation, but that, if

the matter was brought before the courts, the surgeon would be required to prove that such necessity existed. In case of a claim for damages being made by the patient or her family, the court should not grant an indemnity unless it was proved that the surgeon committed an unquestionable professional misdemeanor recognized by expert witnesses. A typical case is that of a patient who consented to an operation for intestinal strangulation but who on awakening, discovered that an artificial anus had been constructed for which he had not been prepared. In such a case if any want of dexterity on the part of the surgeon can be proved, he may be subjected to a penalty. The same is true in case of an important abdominal eversion after a laparotomy. The society discussed the case in which a surgeon is induced to operate on a patient against the patient's desire, the latter declaring that he prefers death to an operation that might save him. It is the surgeon's duty to prevent suicide. It has, however, occurred that women refuse, through fear, a laparotomy for a ruptured ectopic pregnancy or even the simple application of forceps. In case the patient recovers, the surgeon runs no risk, but in case of accident or of death, he will have great difficulty in proving his good intentions. Some one present cited the humorous case of a man who was found hanging to a limb of a tree, life being almost extinct. A good Samaritan passing by hastened to cut the rope with his knife. The man in falling suffered a fracture of the thigh and remained lame for life. He summoned his benefactor before the courts which condemned the latter because in their opinion he should have used greater precaution in rescuing the hanged man.

#### Proposed Reorganization of Sanitary Services

The Parti social de la sante publique, an association of physicians, hygienists and sociologists has protested against the distribution, among a dozen different ministries of the services connected with medicine and hygiene. There is a technical service of this kind in every ministry which gives rise to confusion, the undue expenditure of funds and duplication of effort. The remedy appears to be a concentration within a single organization, the ministry of public health. The Academy of Medicine is under the control of the ministry of public instruction, the same as the faculties of medicine. Epizootics and the surveillance of food products are in the hands of the ministry of agriculture. The health services of the railways and other common carriers are under the supervision of the ministry of public works. The departments of war, navy and the colonies have their own medical services. A vast saving in personnel and equipment would result from an amalgamation of all these services under one management. Thus far all that has been accomplished is the creation, within the ministry of public health, of two large commissions in which all these services have a representative, who has little authority. A long time probably will elapse before such centralization is brought about since each of these organizations finds it advantageous to function in an isolated manner under conditions in which medicine is treated as a secondary factor.

#### The International Congress on Child Welfare

The Congres international pour la protection de l'enfance will be held in Paris July 4-9, under the chairmanship of Mr. Strauss, senator and member of the Academy of Medicine. The work of the congress will be divided into eight sections, as follows: (1) motherhood, prenatal consultations, (2) early childhood, the importance of mothers possessing a technical education in the campaign against infant mortality, (3) later childhood (children aged 3-14), supervision of the physical development of the child during the school period, (4) adolescence (ages 14-18), supervision of the physical development of the adolescent, (5) abnormal children, practical means of teaching a trade to abnormal children and of facilitating its pursuit, (6) social service, social aid for the child of school age, (7) wards of the state, organization of legal guardian-

ship of illegitimate children, (8) various communications questions dealing with the protection of mother and child and not coming under the head of questions proposed by the other sections. Additional information in regard to the congress may be secured by addressing Secretariat général, 26 Bld. de Vaugirard, Paris (XV<sup>e</sup>).

#### BERLIN

(From Our Regular Correspondent)

May 8, 1933

#### The Reorganization of the Medical Profession

Dr. Haedenkamp, the Berlin plenipotentiary of the medical syndicates, has been summoned to serve as a commissary in the federal ministry of labor, to elaborate the new organization of the federal system of health insurance. Following a report on the reception of the leaders of the medical organizations by chancellor Hitler, he expressed his views on the physician in the new state. Professional politics in medical circles, in the sense of the exercise of power or the employment of force measures, will no longer exist. The influence and authority of the medical profession in the new state will be based on accomplishments and on nothing else. "It is not the array of expensive equipment nor the superabundance of medicines and remedies that effect the cure but rather the living human forces that are emitted by the personality of the physician."

Haedenkamp states further that the work of welding the medical profession of Germany into the new state is proceeding regularly in accordance with a clearly conceived plan whereby the medical profession shall be guided by a central government authority, although it will administer its own personal affairs in a general way. It is not simple to weld together the medical organizations, the leagues representing economic affairs and the professional and legal organs of the body of physicians. The medical care of persons insured in the health insurance societies must not be endangered or disturbed. The reorganization of the economic central body will be brought under the control of the state and will have to be guided by government authority. The existing *aerztekammern* or chambers of physicians, will be dissolved and the local groups will then constitute the basal structure for a *reichsärztekammer*, or federal chamber of physicians. The new organization of medicine will consist of two parts, one subdivision having to do with purely professional matters and political matters affecting medicine, and the second subdivision with economic affairs and social politics. With respect to the division of tasks and duties, the preeminent duties of the profession lie in the fields of the care of public health and race hygiene or eugenics.

By using existing bodies and regulations, a legally recognized council on medical ethics and a system of health, disability and old age insurance for physicians must be set up. The existing *Deutsche Aerzteversicherung* may be used as a nucleus.

The whole structure can rest on the legal basis of a federal *reichsärzteordnung*, or a federal council on medical ethics. The physician can thus finally emerge from the *reichsgewerbeordnung*, or the federal industrial council in which he is classed with industrial workers and can attain to a legal status in keeping with the importance and the heavy responsibilities associated with the tasks that he must fulfil as the defender and promoter of public health.

#### Heart Surgery

Professor Stich, surgeon of Göttingen, spoke recently before the Hanover Medical Society on 'Observations on Heart Surgery.' One need go back no further than to Billroth to find a surgeon who regarded operations on the heart impossible. Only a year elapsed after Billroth's statement before Block of Danzig did his first work on the heart, although fifteen years passed before Louis Rehn performed the first successful heart

suture. Without operation 85 per cent of persons suffering heart injuries die, whereas 79 per cent of the persons successfully operated on are restored to full working capacity. Withdrawal of the heart from the pericardium often causes fibrillation. Injury of the coronary artery is nearly always fatal. Tension of the pericardium demands prompt intervention. From 30 to 50 per cent of patients with heart injuries die as a result of secondary manifestations of pericarditis. Bacteria that have been brought in by the trauma must be removed. Recent penetrating projectiles are usually removed, older foreign bodies are allowed to remain if they produce no symptoms. The pathologist often finds foreign bodies in the heart, though the patient did not know of their existence. Calculi of the pericardium arising from fibrinous excretions or pericardium bodies produced by the echinococcus (about fifty cases of which are described in the literature) are not amenable to surgical treatment. In effusion into the pericardium pain is caused more by the suddenness of the event than by the quantity of the fluid, which may be 750 cc without grave danger. Puncture of the pericardial effusion and pericardiectomy in purulent effusion are no longer rare interventions. In all forms of pericarditis indurations may develop. In accretio pericardii the heart appears enlarged on percussion and also in the roentgenogram, in concretion pericardii and complete adhesion of the heart to the pericardium, the heart is small and shows in the roentgenogram evident lime deposits extending into the pericardium. The prognosis in case of purely internal treatment is not favorable. The mechanical process requires elimination through operation. Thoracotomy in accretio pericardii gives good results (17 per cent mortality) if the diagnosis is accurate and the technic is good. Surgical intervention in concretion pericardii involves, however, a much more difficult technic and a much higher mortality (about 25 per cent). Although the results of surgical treatment in angina pectoris and heart failure (division of the depressor and the sympathetic nerves) are not encouraging, there is no reason for resignation.

#### Health Exposition in Berlin

In the Berlin "Sport Palace" the first Exposition of Health Sport and Hygiene, of Greater Berlin, was opened, April 27, with an address by Ministerialrat Dr. Conti, who since the political overthrow of the Prussian administrative bureau of medicine has held a leading position. He emphasized that it is not the task of a nation to create solely model institutions for the sick and the blind. Much greater importance attaches to improving the health of the people as a whole. The purpose of this health survey is to promote that idea. The revolutionary changes in the public health system have not yet been completed. The medical profession had already shown a tendency to try to get away from overspecialization. The power of the state will exercise the necessary control in order to unite all divergent movements dealing with therapeutics, housing, nutrition and physical education on the basis of their contributions toward the improvement of the health of the people as a whole.

Numerous societies, establishments and institutes in the field of hygiene have taken part in the health survey.

#### Activities of the German Hygienic Museum

In addition to the continuous work of the Deutsches Hygienemuseum in Dresden, which supplies the whole German Reich with material on subjects pertaining to health, mention may be made, in connection with the activities of the year 1932, of the carrying out of the annual health survey, which comprised three exhibits and numerous lectures and film presentations. During the year, three traveling exhibits were constantly on the move, namely, 'Man in Health and Disease,' 'Healthy Women Mean a Healthy People' and 'The Fight Against Cancer.' In Germany these three exhibits were shown in 1932 in twenty-one places and attracted 400,000 visitors. In addition, exhibits were sent to some foreign countries, chiefly

Austria, Sweden and the Netherlands. The traveling exhibits as a whole were set up in twenty-eight places at home and abroad and more than 700,000 persons visited them. More than 20,000 photographs were lent to illustrate lecture courses.

#### Roentgenologic Demonstrations of the Human Brain in a Living Subject

Dr. Radović and Dr. O. Meller of Bucharest report in the *Klinische Wochenschrift* on a new method for the roentgenologic demonstration of the human brain in the living subject. They experimented with methods of demonstrating in roentgenograms the plastic relief of the central nervous system by obscuration of the spinal fluid with the aid of a contrast medium. For this purpose they injected a colloidal solution of thorium dioxide into the spinal canal or into the brain, first into the dead bodies of new-born infants and later also in rabbits, dogs and apes. The sulci between the convolutions of the brain appear as black narrow stripes, whereas the convolutions stand out in relief. The spinal cord itself appears to be limited by two black parallel bands, which correspond to the shadow-producing spinal fluid. Since, after from one to three months, the relief outlines of the central nervous system have become much paler and the dark stripes appear only as very fine lines, it may be assumed that the injected substance is gradually absorbed and disappears from the surface of the brain. The animals treated in this manner do not behave differently from the controls. The authors believe, therefore, that the favorable results justify the use of this or similar technic on man. The use of thorium salts for a demonstration of other organs has been known for several years.

#### PRAGUE

(From Our Regular Correspondent)

April 21, 1933

#### A Physicians' Savings Bank

The annual report of the Savings Bank of Czechoslovakian Physicians has just been published. The savings bank was founded in 1906 and it has had a steady and continuous growth. The bank tries to concentrate in its hands the financial resources of Czechoslovakian physicians, veterinarians and pharmacists. It will soon have 3,000 members. The administrative center is in Prague, but there are branches in two provincial capitals, Brno and Bratislava, and one in Kosice. The bank collects the savings of physicians, veterinarians and pharmacists and places them out as loans to members of the same professions who need them for investments in new offices, homes or sanatoriums. Only through the help of this institution could the central Home for Czechoslovakian Physicians have been erected in Prague. Another important function of the bank lies in the fact that it takes over the liabilities of those who do not pay regularly to the physicians and through its machinery enforces the payment of fees. This has become an important function not so much with private patients as for insurance bodies which find themselves in a difficult financial situation and do not pay their physicians in time. The physicians receive their respective amounts as loans from the bank, which are ultimately covered by the recovered payments including the interest which is paid to the bank for the loan. The board of directors of the bank has always adhered strictly to a conservative financial policy, which has meant for physicians the conservation of their property in spite of the turbulent times. The bank distributed a dividend of 7 per cent for 1932. In addition, it is able to use its surplus for gifts which usually aim at some activity for the advancement of the medical profession. Two years ago a donation was made for the erection of a consultation station for young physicians and medical students, last year a gift was made toward the organization of a study on the present status of medical practice in Czecho-

slovakia. The main functions of the bank are in the hands of the heads of the Czechoslovakian medical organization and consequently the physicians are guaranteed that the bank's interest lies exclusively in the promotion of the well being of its members. The depression which has just passed has given to physicians in Czechoslovakia an opportunity to appreciate the advantages of such an institution.

#### A Professional Automobile Club

The physicians of Czechoslovakia have an active automobile club, which bears the name of Aesculapius. The organization now comprises about 800 members. The members have the right to use a sign on the car which gives them certain privileges but imposes also certain obligations. The sign is a red cross in a blue field with a golden snake in the middle. It is placed in the front and back of the car and can be illuminated. The sign can remain uncovered only as long as the physician is in service. Every such car must have a standard equipment for first aid to be given by its occupants in case of emergency. The traffic regulations in most large cities give the cars with the sign preference in the traffic and allow parking in places where it is prohibited to other cars. A certain lightening of the tax burden on members of the club has also been attained. Similar medical clubs have been formed in other states of central Europe and at the present time an international union of medical automobile clubs is being considered. The reason for it is that it is intended to obtain for physicians who belong to the club some relief from passport restrictions while crossing the state frontiers on medical duty. The club has been also active in the development of safety first propaganda not only among its members but also among the members of other automobile clubs. It has also deliberated on technical questions concerning first aid in the case of automobile accident, of the equipment of first aid stations and of the organization of first aid service.

#### The Controversy with Sickness Insurance Bodies

The relation of general hospitals to insurance bodies is being discussed in medical circles. According to the present law on sickness insurance the insured is entitled to treatment for four weeks in the hospital at the expense of the insurance bodies, a provision which has been used extensively by the insurance corporations because they find that hospital treatment has many advantages for their patients. The period of disablement is usually shortened by treatment in a hospital. According to the present practice the public hospital authorities do not allow any direct interference of insurance authorities in the treatment of the insured while they are in the hospital. This is a point of dispute between general hospitals and insurance bodies, the latter maintaining that it would be advantageous for them if they could control the progress of the treatment in the hospital, as they could eliminate waste. They maintain that instances could be found wherein the patient was kept in the hospital longer than his actual situation required. They suspect that hospitals do so from financial considerations. The hospitals on the other hand, complain that they usually receive the patient without any record of previous sickness and consequently the examination of the patient has to be done from the start. When the patient is discharged from the hospital there is usually no follow-up service which would guarantee to the hospital that the results obtained will be permanent. The result of this situation was a tendency on the part of some insurance bodies to erect hospitals of their own. Such an institution has been erected in Prague, where the respective sickness insurance body claims excellent results. The medical profession does not look favorably on this movement. It fears that the standard of service in the hospitals might be endangered through the interference of lay people putting into the leading positions of the hospitals physicians not so much according to their professional qualification as according to their political influence.

Some form of readjustment in the present hospital service must be made aiming at a closer connection of hospitals with the insurance bodies if the construction of special hospitals for the insurance corporations is to be prevented. This is generally admitted and ways are being considered by which this can be carried out most advantageously.

#### The League Against Rheumatism

The report of the Czechoslovakian League Against Rheumatism was presented at a recent annual meeting of this organization. The league was organized in Czechoslovakia in 1927 as a national committee of the international league for the campaign against rheumatism which has its seat in Amsterdam. The main activities of the league were concentrated on the advancement of knowledge on the occurrence and treatment of rheumatism in Czechoslovakia. An attempt was made to collect data on rheumatism among the insurance patients. To insure a correct diagnosis, a census of only those who have been sent to watering places for the treatment of rheumatism was carried out among the insurance bodies of the whole state. The league published last year a treatise on rheumatism. Besides many lectures before medical societies by the officers of the league, a graduate course for physicians on the treatment of rheumatism was organized in Prague. The erection of a special consultation station for persons having rheumatism is being prepared in one of the large industrial centers of Czechoslovakia. The league is pleased that its campaign against rheumatism brings many rheumatic patients to Czechoslovakia for treatment.

#### Cleanliness Week

The Czechoslovakian Red Cross organizes every year at Easter an educational week for the advancement of the health of the people. A feature of these campaigns is the support which the Red Cross has been able to obtain from the public authorities. The week is terminated every year by a public session in the parliament which is presided over by the president of the chamber of deputies and is attended by many high officials of the state, including the president of the republic. This year the slogan for more cleanliness was used with the idea that the unemployed could help improve the cleanliness of homes, streets, markets and public lots. This slogan seems to have been a particularly happy choice because great interest was aroused by the campaign. The ceremonies this year impressed authorities so much that a proposition for a similar movement on an international basis is being considered for the world conference of the League of Red Cross Societies in Tokyo next year.

#### A New Orthopedic Department

A new orthopedic department has been opened in Brno at the medical school. Orthopedic departments have been opened in recent years in Prague and Bratislava. The services of a young surgeon Prof. B. Frejka have been secured for the direction of this new institution. The department has 125 beds. The department is not to confine its activities merely to hospital work. Stress is to be laid on preventive work. The clinic will endeavor to become the center of scientific research. Its main function will be the education of young physicians. The clinic will also cooperate with other institutions for the care of crippled children and function as a center for the treatment of complicated cases.

#### British Surgeons Visit Prague

The Moynihan Chirurgical Club of Great Britain was lately the guest of the first surgical clinic of the Czech faculty of medicine of Prague, twenty-eight members of the club with their families visited the surgical institutions of Prague. The program comprised lectures and demonstrations, which were organized by Prof. A. Jirasek, chief of the first surgical clinic of Prague. The visitors attended operations in the clinics and visited also the State Institute of Public Hygiene of Prague,

the new general hospital of the city of Prague and other institutions. This visit was appreciated by the medical profession of Czechoslovakia. This was expressed in several speeches.

## VIENNA

(From Our Regular Correspondent)

April 20, 1933

### Social Insurance in Austria

Concerning the organization of social insurance in Austria further details have been announced from which the following figures have been taken. The many *krankenkassen* scattered throughout the country may be divided into six groups: (1) industrial workers, with about 1,000,000 members and compulsory insurance, (2) agricultural workers, 300,000, (3) mercantile and private employees 280,000, (4) government employees, 170,000, (5) employees of transportation companies, including railways, 170,000, and (6) employees of the municipality of Vienna, 45,000 making a total of about 1,965,000 members. Of this number 100 per cent are insured against disease but only 60 per cent are insured against loss of employment, that is to say, about 40 per cent are enrolled under family insurance. The average monthly income of members of the *krankenkassen* is 156 shillings or about \$22; the highest monthly income is only 200 shillings or about \$30. On this basis, the insured receives a weekly sick benefit during illness or a lump sum compensation in case of accident. The members pay two thirds and the employer one third of the monthly insurance premiums, which average about 24 shillings or \$3.60. The insured member thus pays from 10 to 13 per cent of his income to the *krankenkasse*; the maximum figure being 28.50 shillings, or \$4.28, for workers. In the case of employees who carry also old age pension, the monthly premium amounts to about 14 or 15 per cent of the wages received. The total receipts of the *krankenkassen* in 1931 were 207,000,000 shillings, or \$31,050,000. 93 per cent of which sum was expended for insurance benefits: 60,000,000 shillings for medical aid, 30,000,000 for medicines, 41,000,000 for hospital care and 62,000,000 for sick benefits. For accident insurance, 36,000,000 shillings was received and expended.

### Refusal of Roentgenologists to Participate in Congress to Be Held in Germany

The political upheaval in Germany, with its racial intolerance, has received an unusual disavowal on the part of an eminent scientific body in Austria. For the Congress of the German Roentgenologic Society which is about to convene in Bremen Professor Kienböck, a recognized authority in this field, was chosen last year to serve as chairman. He is also president of the Austrian Roentgenologic Society in Vienna. Since his mother was Jewish, word came from Germany that it no longer seemed desirable that he should serve as chairman. Thereupon, Professor Kienböck, deeply indignant, naturally resigned his position. But the Austrian Roentgenologic Society took the side of its president and decided after this affront, to refuse to participate in the sessions of a society that regards anti-Semitic considerations as of more importance than scientific problems. The congress in Bremen will therefore be held without representation from the Vienna school, which occupies a preeminent position in the field of roentgenology.

### The Role of the Tonsils

In an address before the *Gesellschaft der Aerzte* in Vienna, Dr. S. Peller discussed the results of his study of 17,000 children with respect to the influence of the tonsils on growth and weight. The children were those inspected by the Vienna Institute for Vocational Guidance, following their completion of the elementary school and their ages ranged from 13½ to 16. He found that 13 per cent of the children had had the

tonsils removed (11 per cent of the boys and 16 per cent of the girls), 11 per cent of the total still had hypertrophic tonsils. Peller found that the male children with hypertrophic tonsils were several centimeters (from 2 to 4) shorter and from 2 to 4 Kg lighter than children of corresponding age who were subjected to tonsillectomy several years previously. In the girls, the conditions were somewhat different. The tonsillectomized girls aged from 14 to 14½ years, were from 2 to 2.5 Kg heavier than the girls who have retained their tonsils. The height of girls whose tonsils were removed years previously was not materially different from that of girls who had hypertrophied tonsils. The girls with hypertrophied tonsils began later to menstruate than those whose tonsils were removed early. At the age of 14, 36 per cent of the former and only 18 per cent of the latter were not yet sexually mature, as compared with a general average of 23 per cent for girls of corresponding age and at the age of 14½ the figures were 27, 14 and 15 per cent, respectively. Dr. Peller concludes from these observations that the tonsils have a regulatory mechanism affecting growth, as a retarding factor—at least during the ages 13-16 years, particularly in boys, whereas in the girls they appear to affect only the weight. Removal of the tonsils produces in boys greater height, but in girls only greater weight; the height not being influenced. The tonsils affect the onset of sexual maturity in girls, not that their removal causes an acceleration of sexual maturity but merely tends to make the onset correspond more closely to normal. Scarlet fever and diphtheria are noted much more frequently in the history of juveniles who have hypertrophied tonsils or who have undergone tonsillectomy than in the general average of the same age. Dr. Peller concludes that the increased predisposition to scarlet fever and diphtheria in children with hypertrophied tonsils is not due to such hypertrophy but that the two conditions are parallel manifestations. In children who had had scarlet fever or diphtheria or both diseases, pathologic tonsils were much more frequent than in children who had not had either scarlet fever or diphtheria.

### Infectious Diseases in Austria

The report of the Central-Gesundheits-Amt for Austria reveals that during the months of January and February, 1933, infectious diseases in Vienna show a slow but steady decline with respect to the most important types. Scarlet fever receded about 15 per cent, diphtheria 16 per cent, typhoid 5 per cent, paratyphoid 12 per cent, chickenpox 25 per cent and poliomyelitis 30 per cent as compared with the end of last year. Not a case of genuine smallpox or cholera was observed. In the whole territory of Austria, with 6,750,000 inhabitants, only 971 cases of typhoid, 804 of paratyphoid and 80 of dysentery were observed last year. Through the vigilance of the public health service the carriers of bacilli have been controlled and their employment in many instances has been prohibited (particularly in shops where food products are sold) and in other cases has been greatly restricted.

## Marriages

CHARLES T. YARINGTON, Moravia, N. Y. to Miss Florence Jane Hutchinson of Ardmore, May 6.

ROYALE H. FOWLER, Newark, N. J., to Mrs. Pauline M. Perrine of Princeton, April 21.

WILLIAM COPELAND COOK, Cincinnati, to Miss Lucille Van Meter of Delaware, March 24.

BENJAMIN HORTON KENDALL, Shelby, N. C., to Miss Ruby Spratt of Marion, May 1.

JACOB NATHANIEL BAILEY to Miss Nell Cunliff, both of Paducah, Ky., May 8.

L. WILLIAM MORSMAN to Miss Mabel Hay, both of Hibbing, Minn., recently.

## Deaths

**John Chalmers Da Costa** ♂ for about forty-five years a member of the faculty of Jefferson Medical College died at his home in Philadelphia, May 16, following a long illness due to arthritis deformans. Dr Da Costa was born in Philadelphia in 1863. He graduated from the University of Pennsylvania in 1882 and from Jefferson Medical College in 1885 in which year he became a resident physician at the Philadelphia Hospital and in the following year an assistant physician. He was appointed an assistant demonstrator in anatomy at his alma mater and an assistant surgeon at the Jefferson Hospital in 1887, a demonstrator of surgery in 1891 clinical professor of surgery in 1898, and professor of surgery in 1900. In the following year Dr Da Costa was made Samuel D. Gross professor of surgery, which chair he occupied until the time of his death. He has been surgeon to the Philadelphia Hospital since 1895 and to St. Joseph's Hospital since 1896. Among his best known writings is his *Manual of Modern Surgery*, published in 1895, which has gone through many editions. He was editor of the American edition of *Gray's Anatomy* in 1905 and of the English edition of *Zuckerland's Operative Surgery* in 1889, and a frequent contributor to the periodic literature. Dr Da Costa was a member of the College of Physicians of Philadelphia, the American Surgical Association, the Society of Clinical Surgery, and an associate member of the Society of Gynecology and Surgery of Bucharest and fellow of the American College of Surgeons. He served gratuitously for about thirty-five years as surgeon for the city firemen of Philadelphia and of the Firemen's Pension Fund. His international reputation as a surgeon brought him many honors. Under the auspices of the Philadelphia County Medical Society, Da Costa Day was inaugurated in 1930 and the John Chalmers Da Costa Foundation established for the purpose of furthering graduate teaching under the auspices of the county society. Dr Da Costa was a commander in the U. S. Naval Reserve forces, and during the World War accompanied President Wilson to France.

**Clarence Erford Coon** ♂ Syracuse, N. Y., Syracuse University College of Medicine 1898, professor of orthopedic surgery at his alma mater, past president of the Onondaga County Medical Society and the Syracuse Academy of Medicine, fellow of the American College of Surgeons, served during the World War, on the staffs of the Hospital of the Good Shepherd, Syracuse University, Syracuse Memorial Hospital, Syracuse Free Dispensary, and the New York State Reconstruction Home, West Haverstraw, aged 65, died, April 22, of limits plastica, anemia and coronary thrombosis.

**Ray Connor** ♂ Detroit, Johns Hopkins University School of Medicine, Baltimore, 1901, formerly assistant clinical professor of ophthalmology, Detroit College of Medicine and Surgery, member of the American Academy of Ophthalmology and Oto-Laryngology and the American Laryngological, Rhinological and Otolological Society, fellow of the American College of Surgeons, served during the World War, surgeon to the Children's Free and Providence hospitals, aged 56, was found dead, April 21, of heart disease.

**Owen Copp**, Philadelphia, Harvard University Medical School, Boston, 1884, member of the American Psychiatric Association and the New England Society of Psychiatry, executive secretary of the Massachusetts Board of Insanity, Boston, 1899-1911, superintendent of the Massachusetts Hospital for Epileptics, Monson, Mass., 1895-1899, physician in chief and administrator, Pennsylvania Hospital for Insane, Philadelphia, 1911-1922, aged 75, died, April 18, in Seville, Spain, of heart disease.

**Jefferson H. Wilson** ♂ Beaver, Pa., Bellevue Hospital Medical College, New York, 1876, past president of the Beaver County Medical Society, fellow of the American College of Surgeons, on the staffs of the Rochester (N. Y.) General Hospital, Beaver Valley General Hospital, New Brighton and the Providence Hospital, Beaver Falls, aged 82, died, April 5, of cerebral hemorrhage.

**Isaac Jay Furman**, New York, Syracuse University College of Medicine, 1906, member of the American Psychiatric Association, formerly associate clinical professor of psychiatry, Columbia University College of Physicians and Surgeons, medical superintendent of the Manhattan State Hospital, Wards Island, aged 54, died, May 5, of cerebral hemorrhage.

**James M. Wright** ♂ Denison, Kan., Kansas Medical College, Medical Department of Washburn College, Topeka, 1902, fellow of the American College of Surgeons, president of the

Jackson County Medical Society, for twenty-five years a medical missionary in China, aged 62, died, February 18, of bronchopneumonia.

**Losey Lynn Harding** ♂ Frankfort, Ind., Indiana University School of Medicine, Indianapolis, 1917, past president and secretary of the Clinton County Medical Society, on the staff of the Clinton County Hospital, aged 45, died, April 28, in the Methodist Hospital, Indianapolis, of uremia and interstitial nephritis.

**Joseph Max Irwin** ♂ St. Augustine, Fla., Washington University School of Medicine, St. Louis, 1902, past president and secretary of St. Johns County Medical Society, served during the World War, on the staff of the Flagler Hospital, aged 61, died suddenly, April 19, of heart disease.

**Virgil Charles Kinney**, Wellsville, N. Y., Columbia University College of Physicians and Surgeons, New York, 1902, medical superintendent of the Wellsville Sanatorium, aged 59, died, April 26, in St. Petersburg, Fla., of metastatic carcinoma of the spine and liver and bronchopneumonia.

**Gideon Johannes Ferreira** ♂ Duluth, Minn., State University of Iowa College of Medicine, Iowa City, 1920, county health officer, formerly health officer of Aurora, aged 38, died, April 13, in St. Luke's Hospital, of pulmonary embolism following an operation on the gallbladder.

**James Daniel Currie**, Hico, Texas, George Washington University School of Medicine, Washington, D. C., 1906, member of the State Medical Association of Texas, served during the World War, aged 61, died, March 9, in a hospital at Stephenville, of pneumonia.

**Alphonso Isom** ♂ Dumas, Ark., St. Louis College of Physicians and Surgeons, 1906, past president of the Desha County Medical Society, served during the World War, physician in charge of the Dumas Hospital, aged 47, died, April 24, of heart disease.

**James P. T. Stephens**, Vaiden, Miss., Tulane University of Louisiana Medical Department, New Orleans, 1900, member of the Mississippi State Medical Association, county health officer, aged 56, was killed, April 29, in an automobile accident.

**George W. Mitchell** ♂ Hornell, N. Y., Syracuse University College of Medicine, 1909, member of the city board of health on the staffs of St. James Mercy Hospital and the Bethesda Hospital, aged 49, died, April 26, of heart disease.

**Albert Jacques St. Germain**, Chicago, Rush Medical College, Chicago, 1921, aged 38, on the staff of St. Luke's Hospital, where he died, April 28, as the result of injuries received in an elevator accident in the building in which he resided.

**Horace G. Harvey** ♂ Denver, Missouri Medical College, St. Louis, 1887, formerly professor of surgery, University of Colorado School of Medicine, aged 70, died, April 15, of cerebral hemorrhage and chronic nephritis.

**Esther Anne Ryerson**, Dayton, Ohio, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903, aged 79, died, April 19, at the Orchard Springs Sanatorium, of uremia.

**Christian Jacob Rohwer** ♂ Seattle, University of Pennsylvania School of Medicine, Philadelphia, 1921, aged 42, died, April 16, in the Virginia Mason Hospital, of carcinoma of the sigmoid and pulmonary embolism.

**John A. Jones**, Tonkawa, Okla. (licensed Oklahoma, under the Act of 1908), member of the Oklahoma State Medical Association, aged 59, died, April 19, in the Wesley Hospital, Wichita, Kan., of carcinoma.

**Joseph Sarvis Dusenbury**, Conway, S. C., Medical College of the State of South Carolina, Charleston, 1890, member of the South Carolina Medical Association, aged 66, died, May 1, of pneumonia.

**Henry Adoniram Vann**, Boston, Ga., University of the City of New York Medical Department, 1871, member of the Medical Association of Georgia, aged 83, died, April 17, of cerebral hemorrhage.

**Verdo Benjamin Gregory**, Tulare, Calif., College of Physicians and Surgeons, Medical Department, Kansas City University, Kansas City, Kan., 1897, aged 63, died, April 15, of angina pectoris.

**Ernest Clifford Fish** ♂ Melrose, Mass., McGill University Faculty of Medicine, Montreal, Que., Canada, 1896, aged 65, died, April 25, of arteriosclerosis, chronic myocarditis and cardiac asthma.

**Harley Edgar MacDonald**, Redding, Calif., Ohio Medical University, Columbus, 1906, member of the California Medical Association, aged 54, died suddenly, April 20, of coronary embolism.

**William Lawrence Burns** \* Cumberland Md , University of Maryland School of Medicine, Baltimore 1908, on the staff of the Memorial Hospital, aged 50, died, April 1, of coronary occlusion

**Adam Donaldson Wilson**, Fresno Calif University of Edinburgh Faculty of Medicine Edinburgh, Scotland 1886, aged 69, died, March 12, of aneurysm of the abdominal aorta

**Allen Salter** \* Lena Ill College of Physicians and Surgeons Chicago 1893, aged 68, died April 22, in Freeport, of chronic myocarditis arteriosclerosis and cerebral thrombosis

**Napoleon B Beakley**, England Ark University of Arkansas School of Medicine, Little Rock, 1893 president of the school board, aged 69, died April 15 of heart disease

**William Joseph Lee**, Panama City, Fla Kentucky School of Medicine, Louisville, 1893, member of the Florida Medical Association aged 61, died, April 22 of heart disease

**Fred William Schecher**, St Bonifacius Minn , Chicago College of Medicine and Surgery 1910 aged 48 died suddenly, April 7, of coronary disease and hypertension

**Daniel Alexander McClenahan**, Hamilton, Ont , Canada Trinity Medical College, Toronto, 1894 district health officer of Hamilton, aged 66, died suddenly, March 4

**John Joseph Kosker**, Nanticoke, Pa , University of Pennsylvania School of Medicine Philadelphia 1920 aged 39 died, January 25, of influenza and acute myocarditis

**Joseph C De Wane** \* Wolf Point, Mont Milwaukee Medical College, 1909, aged 50 died, May 2, of erysipelas and adenitis of the cervical glands

**Robert W Bowling**, South Pasadena Calif , University of Louisville (Ky) School of Medicine 1893, aged 61 died April 18, of cerebral hemorrhage

**Edward Joseph Sweeney**, Springfield Mass Jefferson Medical College of Philadelphia, 1907 aged 54, died March 14, of coronary thrombosis

**Edwin Nathan Johnston**, Minneapolis State University of Iowa College of Medicine, Iowa City, 1895 aged 64, died, April 10, of heart disease

**Joseph Dallas Smith**, Columbus Ohio, University of Wooster Medical Department, Cleveland, 1880, aged 88, died, April 26, of heart disease.

**Peter E Brown**, Ste. Anne de Bellevue, Que. Canada McGill University Faculty of Medicine Montreal, 1863, aged 96, died, February 28

**Walter S Hunter**, Greenwood Del , Medico-Chirurgical College of Philadelphia, 1904 aged 51 died suddenly, April 23, of heart disease

**Joseph T Arthur Gauthier**, Valleyfield Que. Canada, Laval University Faculty of Medicine, Quebec, 1894, aged 66 died February 5

**Henry Johnson Arnold**, Barnesville Ohio Ohio Medical University, Columbus, 1898, aged 64, died, April 26, of cerebral hemorrhage

**Francis Octave Eugene Larue**, St Flavien, Que , Canada Laval University Faculty of Medicine, Quebec, 1884, aged 73, died in January

**Leslie A Woolf** \* Ravenna, Ohio Medical College of Ohio, Cincinnati 1905 aged 54 died April 30, of cerebral hemorrhage

**James Simon Kennedy**, Medford Mass Boston University School of Medicine 1894, aged 66 died April 4, of cardiac insufficiency

**Fred Wilson Bush**, Van Horne, Iowa Barnes Medical College, St Louis, 1897, aged 62, died, April 12, of hypernephroma

**James Duncan Campbell** \* Grand Rapids Mich , Detroit College of Medicine, 1896, aged 72 died May 1 of angina pectoris

**George F Dinsmore**, Jacksonville, Ill , Kentucky School of Medicine, Louisville, 1894, aged 66, died, April 19 of heart disease.

**Walter Warder Dye**, Ewing Ky , Hospital College of Medicine, Louisville 1889, aged 84, died, April 27, of tuberculosis

**William Henry Greene** Boston, Tufts College Medical School, Boston, 1896, aged 55 died, April 24, of gastric hemorrhage

**Rayman Harmon**, Grand Rapids Mich. Detroit College of Medicine 1894 aged 66 died April 28 of heart disease.

**Ellis H Adams**, Porterdale, Ga Atlanta Medical College, 1882, aged 80, died February 21 of carcinoma

## Bureau of Investigation

### THE ADLER TREATMENT

#### Another Flier in the Cancer-Cure Field

For some time inquiries have been coming in regarding the so-called Adler treatment for cancer. A letter just received (May 6) from Dr Benjamin S Levine of Brooklyn is somewhat typical. Dr Levine writes in part:

I called to see a patient of mine who has an extensive metastatic cancer of the breast with marked cachexia and they showed me a pamphlet issued by the Adler Laboratories of 591 Summit Avenue, Jersey City, New Jersey the title of this pamphlet being Adler Treatment of Neo plastic Diseases. The name of a Dr William J Poulin is mentioned as the medical director.

This laboratory furnished these people with a fancy blue bottle with a silver label in which there were some hundred red-colored capsules which contained a gelatinous substance for which they paid \$10.00. I would appreciate any information on this matter that may be on file at your office."

The "Adler Treatment of Neo plastic Diseases" is said to have been 'perfected' by one Louis Adler, who seems to have been in the 'cancer cure' business for some years. Louis Adler lives in Newark, N. J. but the so-called Adler Laboratories, Inc., operate from Jersey City, N. J.

## Can Cancer Be Conquered?

Write for Dr Poulin's new book for the truth about this disease. It will open your eyes to the facts about cancer and its treatment. There is no charge for Dr Poulin's frank and authoritative book. Write for it now if you would help yourself or some stricken relative or friend. Address William J Poulin, M. D., Adler Laboratories, 591 Summit Avenue, Jersey City, N. J.

An advertisement that appeared in an Ohio paper in the spring of 1932

In 1921 a Newark, N. J., newspaper reported that Louis Adler of that city had been arrested for practicing medicine without a license in connection with the exploitation of an alleged cure for cancer. Adler was reported to have been found guilty and fined \$200 and costs. From Adler's Newark address he has put out a line of 'patent medicines,' among them being "Adler's Wonder Salve," "Adler's Blood Purifier" (which seems to be another "cancer cure") and "Adler's Stomach Cleanser."

Adler Laboratories, Inc., is a New Jersey corporation whose certificate was filed in April, 1932 with an authorized capital of fifteen shares of Class A and forty shares of Class B stock, both being of no par value. The incorporators and officers were reported to be:

LOUIS ADLER President  
JACOB LEVY Vice President

ABRAHAM SEPENUK Secretary  
LOUIS FORT Treasurer

Louis Adler was said to hold nine shares of Class A and one share of Class B stock, while each of the other three men were said to hold two shares of Class A and eight shares of Class B. Louis Fort has been described as an electrical contractor, and Jacob Levy and Abraham Sepenuk as lawyers.

The medical director of the Adler Laboratories is William J Poulin, M. D. Dr Poulin was born in 1884 and holds a diploma from Fordham University School of Medicine 1912. He is licensed to practice in New York and New Jersey. He is not a member of his local medical society or, of course of

the American Medical Association. On one of Dr Poulin's professional cards his address is given as 1001 Park Avenue, Woodcliff N J. According to the same card Dr Poulin is "Especially Interested in Cancers Ulcers Hemorrhoids, Diabetes Hay Fever Asthma and Allied Allergic States."

Adler Laboratories Inc., sends out a twenty-two-page booklet as part of its advertising. According to this booklet, Louis Adler is a Hungarian chemist who "during the course of his researches and experiments developed a theory" that cancer is due to "the accumulation in the system of poisonous waste matter." The booklet quotes indiscriminately such scientific extremes as W. Arbuthnot Lane, J. H. Tilden, William F. Koch and William J. Mayo and Francis Carter Wood.

Nowhere in the booklet is there any information on what constitutes the Adler treatment although an entire page of the booklet is devoted to the alleged answer to a question which forms the caption of the page "What Is the Adler Treatment?"

**Excerpts of Report by Dr. Bela Teglassy  
CHIEF PHYSICIAN ASSISTANT PROFESSOR OF THE  
CLINIC OF THE UNIVERSITY OF BUDAPEST**

My dear Mr. Adler:

I did not desire to give an opinion regarding your treatment until I had proceeded far enough in my experiments to be able to render an accurate report of the results.

I concentrated my efforts on cancer and ulcers as you requested.

I have reached the point where in about four to six weeks I shall insert an article in one of the newspapers concerning my experiments. I shall forward a copy of this article to you.

I plan to use the following headline in this article "Medicinal Handling and Cure of Cancer and Ulcers Through the Digestive Organs." On describing the wonderful effects of the remedy, I shall refer to it as the invention of our compatriot, Louis Adler, now living in Newark, New Jersey, with the aid of an assistant professor of the clinic.

Experience in the United States and also here up to the present, shows that it is a wonderful remedy.

If you agree with me as to the writing of that article, please inform me of your consent.

I am not sparing time, energy and work and shall not tire until we convince the world of the results that are achieved by your remedy.

I am at work with heart and soul and all my knowledge, and we cannot but succeed.

In a short time the world will know your remedy.

My only request to you now is to send me more of the capsules so that I may continue my work without interruption.

I am confident that when I publish my article in the paper I shall be besieged for the remedy.

(Signed) Dr. Bela Teglassy

Photographic facsimile (greatly reduced) of the alleged letter of Dr. Bela Teglassy to Adler.

The nearest the booklet comes to giving information on this point is a vague statement to the effect that the Adler treatment is a compound "prepared in capsule form entirely of organic products containing no drugs and no poisons." With each booklet that is sent out is a four-page diagnosis blank, typical of those used by mail-order medical concerns. It is emphasized that it is unnecessary for any patient to come to New Jersey, and the statement is made in italics:

*'The Adler treatment can be administered at home by the patient himself or by some member of his household.'*

The prospective patient is warned that should he consult the physician who has treated him and seek his aid in filling in the diagnosis blank, he should not "permit him [the family doctor] to discourage you in the Adler treatment." It appears that the Adler treatment although based on the theory that cancer is due to "the accumulation in the system of poisonous waste matter" differs according to the location of the cancer.

To those who have an "external" cancer the cost for a treatment is \$15, to those with an "internal" cancer the cost is but \$10.

In the same booklet issued by the Adler Laboratories, much space is devoted to the reproduction of what is claimed to be a report by Dr. Bela Teglassy of Budapest. A letter purporting to be from Dr. Teglassy to Adler is reproduced, and a notary public of New Jersey swears that it is a true translation of the original written in the Hungarian language by the Chief Physician and Assistant Professor of the Clinic of the University of Budapest, Dr. Bela Teglassy. In this letter Dr. Teglassy states in effect, that after experimenting with Adler's cancer cure, 'he had reached the point where, in a short time he was going to insert an article in one of the [Budapest?] newspapers concerning my experiments. The letter states further that Dr. Teglassy plans to use "the following headline in this article 'Medicinal Handling and Cure of Cancer and Ulcers Through the Digestive Organs.'" Dr. Teglassy is also quoted as stating that he intended to refer to the cancer cure 'as the invention of our compatriot, Louis Adler, now living in Newark, N. J.' The letter closed with the request on the part of Dr. Teglassy that Adler send him some more of his treatment' because, the doctor stated, he was confident that when he published his article in the paper he would be 'besieged for the remedy'."

The Bureau of Investigation looked into this matter and learned several things of interest. It found first that Dr. Bela Teglassy seems to be much more important in politics than he is in medicine. In 1931 Dr. Teglassy was elected in a provincial district to the House of Deputies. The Bureau of Investigation received, also a letter from the Dean of the Medical Faculty of the Royal Hungarian Pazmany Peter University of Budapest, stating that Dr. Teglassy was never assistant professor in that institution and was never in charge of its cancer research work. It appears that Dr. Teglassy did serve as an unsalaried junior in the dermatological clinic for two years and as a salaried junior for the next two years. In the last year of his service he had the title of unpaid assistant, and for a time it was his duty to look after the servants, nurses, household and kitchen. Obviously, the attempt on the part of Adler to drag in the good name of the University of Budapest is without the remotest justification.

Dr. Szado, the dean also sent the Bureau of Investigation a letter written by Dr. Teglassy himself, in which he attempts to explain his episode of the Adler treatment. The letter is not convincing. According to Dr. Teglassy some five or six years ago a Mr. Adler visited him and presented him with 'a gelatinoid anti cancer preparation' which, according to Adler, was being used with very good results in the United States. As Dr. Teglassy had some cancer patients in his private practice he accepted some of the Adler preparation, sent some of it to a chemical laboratory and having been informed that the laboratory could not determine the exact composition of the preparation but that it was an extract of vegetable material and non-poisonous, he administered the preparation to his patients who he claimed after a few months use reported a certain sedative effect. Dr. Teglassy stated further that the Mr. Adler who brought the preparation asked him to give a few lines telling that the preparation had shown a good effect so.

On my prescription blank I gave him a few lines in which according to my best recollection I wrote that the offered gelatinoid vegetable preparation has been used by my patients suffering with cancer and after its use they have felt a certain sedative effect.

Dr. Teglassy's letter says further that a few months after this the Adler person disappeared, and having no more of the Adler preparation, he (the doctor) was unable to continue experimenting with it. Dr. Teglassy expresses astonishment to learn that his name is being used in an advertising campaign in the United States and believing it to be a misrepresentation he would protest energetically to the American legation that the use of his name be stopped. Dr. Teglassy closes his letter with the acknowledgement that he did not administer the Adler preparation in the University Clinic but only in his private practice.

Of practical interest to the sufferer from cancer is a report by Dr. Ira I. Kaplan, Director of the Division of Cancer, Bellevue Hospital New York City, who tried the Adler treat-

ment in three cases which had been selected by medical director Poulin as being most likely not to show harmful results Dr Kaplan reported last fall 'We gave his treatment as he directed it. All three patients died horribly and miserably. In two other cases treated under Dr Kaplan's supervision, both died.

## Correspondence

### "TREATMENT OF BURNS WITH GENTIAN VIOLET"

*To the Editor*—In the article entitled 'Treatment of Burns with Gentian Violet' (THE JOURNAL, April 22, p 1219) Connell Fatherree, Kennedy and McSwain report good results in the treatment of five patients with from 5 to 9 per cent surface area involvement, with 1 per cent gentian violet in a tragacanth jelly base.

In THE JOURNAL, April 16 1932 V P Blair W G Hamm and I reported the use of a 5 per cent sodium chloride jelly in the care of burned patients 'Since March 1930 we have used as a dressing a water-soluble jelly to which has been added from 2 to 5 per cent sodium chloride this has proved satisfactory in many cases' we stated, and in a footnote, 'Besides the present strength of 5 per cent sodium chloride, the following ingredients have been used 2 to 5 per cent magnesium sulphate, 2 per cent gentian violet, thymol, eucalyptol, and 2 per cent sodium chloride.'

In the usual case we have felt that the sodium chloride jelly would suffice and have been a little prompted in the matter by the troublesomeness of the staining of the gentian violet and its prolonged evidence. However, in some badly infected cases gentian violet may prove to be an effective agent and we have had apparent success with it on some infected skin grafts when other care seemed to fail. The saline jelly has somewhat the effect of a hypertonic wet dressing and we have used it in several types of infected wounds.

Connell and his associates state that no contraction scars remained in any case but it is undoubtedly true that if the full thickness of the skin is completely lost over a large area there will be scar deformity if spontaneous healing is awaited, regardless of how the wound is treated.

J B BROWN, M.D. St Louis

### "SAFETY PIN IN VAGINA OF CHILD"

*To the Editor*—In THE JOURNAL, April 15 appears an interesting account of a safety pin in the vagina of a 4 year old child whose hymen was imperforate. The author Dr Nixon, supplements his communication with a list of similar cases culled from the literature. May I add another? In the case of a child, aged 2½ years seen by me about ten years ago a mucopurulent vaginal discharge had persisted for six months in spite of treatment with antiseptic and astringent douches and instillations by a well known pediatrician who had regarded the condition as a benign vulvovaginitis as the smears were negative. Under this therapeutic regimen the condition would ameliorate and increase and during one of these remissions the child was brought to Atlantic City. After arrival here a sharp exacerbation occurred. When I saw the patient examination disclosed the hymen imperforate except for a small opening in its upper half. On the passage of a probe through this aperture, well into the vaginal cavity, its end came in contact with some hard metallic body. The hymenal opening was then enlarged and by forceps a closed, blackened safety pin, about 2 inches long was easily removed. In a few days the discharge ceased, without further treatment. No adequate explanation could be found as to how the pin

gained entrance into the vaginal canal although it might possibly have been introduced by a nurse, discharged by the mother some months previous, because of misconduct.

D J MILTON MILLER, M.D., Atlantic City, N J

### PORTRAYALS OF DISEASE IN FICTION

*To the Editor*—In the April 29 issue of THE JOURNAL, Dr Phillip E. Rothman cites an instance of the portrayal of the symptoms of a disease in a fictional character appearing before the malady was systematically studied and recorded authoritatively in medical literature, and quotes the character Joe, the fat boy, in Dickens's Pickwick Papers, who was a victim of narcolepsy. May I be permitted to point out another character by the same author that showed sharp power of observation by the writer? In 1848 Dickens in Dombey and Son, chapter XXXVII, capably described the last illness of Mrs Skewton. His delineation of her speechless state, her staring at the ceiling, the making of inarticulate guttural sounds in answer to questions, well depict the symptom complex of hemiplegia. The gradual recovery of some motion in the right hand though not of speech, shows fidelity to nature in a remarkable degree, particularly admirable when emanating from the pen of a nonmedical writer.

In 1861 (thirteen years later) Paul Broca published the memoir wherein he propounded that aphasia is associated with injury to and consequent inaction of the posterior portion of the third frontal convolution on the left side of the brain. This area is now universally known as Broca's space. Curiously enough, the scholarly Dr Oliver Wendell Holmes was not clearly informed regarding the circumstances, for in the course of an address delivered before the Phi Beta Kappa Society of Harvard University, June 29, 1870 he said "A particular spot has been of late pointed out by pathologists not phrenologists as the seat of the faculty of speech. I do not know that our sensations ever point to it."

J A HAGEMANN, M.D., Pittsburgh

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

### USE OF POISON IVY ORALLY AND PARENTERALLY IN DESENSITIZATION

*To the Editor*—Kindly discuss the efficacy of poison ivy extracts used hypodermically in cases of dermatitis venenata and the use of tinctures by mouth in these conditions. Are there any serious bad effects from these injections? Kindly omit name.

M.D. New York.

ANSWER.—The idea that chewing poison ivy leaves has a value in preventing dermatitis is a time honored one. Schamberg in 1916 and 1919, advocated the use of

Tincture of rhus toxicodendron	1 cc.
Alcohol	5 cc.
Syrup of orange to make	100 cc.

One drop of this to be taken in half a glass of water half an hour after a meal, two drops in the same way after the next meal and so on, increasing one drop with each dose until twenty-one drops were taken. After this the dose to be a teaspoonful after each meal throughout the season. Clinical reports on the method were encouraging, many patients stating that after taking the treatment they had been exposed to poison ivy without suffering dermatitis though highly susceptible previously. For cases of dermatitis he advocated the same treatment, except that the dose was to be increased two drops at a time up to eighteen then a teaspoonful dose until the attack was ended. The dose of tincture in this plan is small, the maximum not over 0.05 cc.

Strickler, in 1918 advocated for prophylaxis daily hypodermic injections of an alcoholic extract of poison ivy leaves from 0.3 to 0.5 cc., for from three to five days and then the adminis-

tration of the same extract by mouth. He and many others reported good results.

Krause and Weidman (Ivy Poisoning, *THE JOURNAL*, June 27, 1925, p. 1996) reported a scientific test of this treatment. They found, by testing the sound skin ten of twenty volunteers immune, but when they made the patch tests on irritated skin, only four proved immune. They found that repeated tests on the same area of skin developed no immunity, except to accelerate the appearance and disappearance of the eruption, which was just as severe on the fifth test as on the first.

After treatment for ten days by the Strickler method, retesting showed that no immunity had been developed, but rather an increased irritability of the skin and pruritus and which they ascribed to the action of the toxin, unchanged, being passed by the bowel.

Spain and Cooke (Studies in Specific Hypersensitiveness, *J. Immunol.* 13 93 [Feb.] 1927) made a thorough study, producing a stable alcoholic extract and testing by patch tests with varying dilutions of it. Mouth treatment was used in a few cases but was often unsatisfactory because tedious and frequently forgotten. For the first hypodermic injection they used 0.1 cc. of the highest dilution that produced vesiculation in the patch test. They then increased the dose according to the sensitiveness of the patient. They gave the injections once a week for four or five weeks, then once in two weeks for three or four times, and then once a month for the rest of the season. Although 95 per cent of their patients reported benefit, the patch tests revealed no lessening of skin susceptibility.

Andrews (Diseases of the Skin, Philadelphia J. B. Saunders Company, 1930, p. 314) reports coma lasting for twelve hours following the customary drop doses of the tincture of rhus toxicodendron.

Templeton (Untoward Reactions Following Toxin Treatment for Dermatitis Venenata, *Arch. Derm. & Syph.* 20 83 [July] 1929) reports two types of reaction to the injection of the toxin: local urticaria about the site of injection and widespread urticaria in small wheals at times becoming confluent to form large patches and sometimes mixed with vesicles like dermatitis venenata. Both these were accompanied by intense pruritus. In spite of the experimental work of Krause and Weidman and of Spain and Cooke, Templeton believes that the toxin method is better than the simple soothing method of treatment. He advocates the oral method of Schamberg for mild cases and for desensitization but in severe cases he still uses the injections, beginning with 0.1 cc. and increasing 0.1 or 0.2 cc. each day.

A number of preparations for the injection treatment of rhus dermatitis are included in New and Nonofficial Remedies but no preparation for the prevention of rhus poisoning has been accepted by the Council on Pharmacy and Chemistry.

#### THYROTOXICOSIS WITH POSITIVE WASSERMANN TEST

*To the Editor*—A woman aged 55 is suffering with mild thyrotoxicosis. She has what appears to be an adenomatous enlargement of the thyroid. The heart is normal but rapid. The blood pressure is 160 systolic, 85 diastolic. She has a three plus Wassermann reaction. Would neoarsphenamine be contraindicated? What antisyphilitic treatment would be advisable in view of the thyroid symptoms? No basal metabolism test has been made. Kindly omit name. M. D. New York.

*ANSWER*—The interpretation of a three plus Wassermann test, especially in a metabolic disease such as thyrotoxicosis, may be difficult. In general, results less than a frankly positive or four plus Wassermann test should be discarded in the absence of supportive clinical evidence of syphilis. A careful history regarding the possibility of venereal infection, and a meticulous neurologic and cardiovascular examination, may disclose additional evidence suggesting that the patient may be syphilitic and supporting such a diagnosis. Under any circumstances the Wassermann test should be repeated, certainly in the same laboratory as well as in others, and the physician should know these laboratories since technical errors in the performance of the test are not uncommon.

The diagnosis of toxic goiter should be established beyond any reasonable doubt. Properly executed tests of the basal metabolic rate, repeated on several occasions, would serve a valuable purpose not only in establishing a diagnosis of thyrotoxicosis but also in estimating the effect of management.

Obviously, in the instance cited, several possibilities must be considered. If the correspondent is convinced that the condition is hyperthyroidism, the chance of the patient's having concomitant syphilis is unlikely if the sole evidence of syphilis is the three plus Wassermann test. If, as an outside chance, she really has syphilis, the possibility of the thyrotoxic symptoms being entirely on a functional basis and not due to true thyro-

toxicosis should be kept in mind. If on repeated Wassermann tests in this and other laboratories the reaction is still found to be three plus, a therapeutic trial on antisyphilitic medication should be tried. There can be no harm in carrying out the usual antisyphilitic regimen in thyrotoxic patients including the giving of neoarsphenamine if so desired, provided potassium iodide is at least temporarily withheld. Iodine preparations of all kinds would modify the effects of true hyperthyroidism and might in this way obscure the diagnosis.

If the conclusion is finally reached that the patient is thyrotoxic as well as syphilitic, a definite regimen of first treating her thoroughly for syphilis, including the administration of potassium iodide and, second, when the syphilis is finally under good control and the thyrotoxicosis is under iodine control, subjecting her to a subtotal thyroidectomy at the hands of a good surgeon experienced in thyroid work should be followed. The danger of such a procedure under the conditions mentioned and in the hands of an experienced surgeon should be slight and the probability of effecting a complete control should be very good.

#### FEVER IN PNEUMOTHORAX

*To the Editor*—What is the cause of the rise of temperature in a pneumothorax spontaneous or induced? Please omit name.

M. D. England.

*ANSWER*—Rise of temperature in artificial, or induced, pneumothorax may result from several causes.

1 A compression toxemia, due to the rapid absorption of toxins incidental to the compression of abscessed cavities or other inflammatory matter within the lung.

2 Infection of the pleura, which may cause a rise in temperature within twenty-four to forty-eight hours after the institution of pneumothorax or any one of its refills, owing to such infection being introduced from the outside by way of a contaminated needle or through contamination of the needle, which may puncture the visceral pleura and pick up an infection in the lung tissue.

3 The development of fluid in the pleural cavity, constituting a hydropneumothorax. This occurs in about 50 per cent of the patients within one year of the institution of such therapy. In many instances there is a resorption of such fluid without deleterious results. In other instances it may tend to recur and may require removal by aspiration, especially if it reaches a level of approximately the third rib or fifth dorsal spine.

4 The lighting up of a tuberculous process in the other lung or the establishment of a new metastatic focus of tuberculous disease in the good lung.

In spontaneous pneumothorax there are principally two types.

1 The idiopathic type, usually the result of trauma to the chest wall, or the spontaneous rupture of a superficial bleb during exertion. Only rarely will there be a febrile reaction in this type and that usually is associated with infection and the development of pleural exudate.

2 The type associated with the rupture of a subpleural caseous tubercle into the pleural cavity. This is a most serious condition and but few patients who suffer it live longer than one month. The febrile rise here is due to a definite infection of the pleural cavity, usually resulting within twenty-four hours in a hydropneumothorax and followed immediately by a pyopneumothorax. In this type a compression toxemia may also be a factor in a febrile rise.

#### NIGHT SWEATS

*To the Editor*—What are the causes of nontuberculous night sweats? The patient is a married woman aged 39. The only significant feature in the history was lobectomy for nontoxic goiter in 1912 and 1926. The sweating always occurs at night and is confined to the upper limbs, head and neck, from the head to about the tenth dorsal vertebra. There is also an underdevelopment of the muscles of the right arm and right side of the face. The muscles of the right side have been weak for the past twenty-four years. This side goes into a myoclonus at night or when the patient is tired and is associated with a feeling of cold and fatigue. Please omit name. M. D. England.

*ANSWER*—A nontuberculous infection, either localized or general, or thyrotoxicosis, may cause night sweats. In this instance a careful examination to exclude the possibility of harbored infection, and a basal metabolic rate determination under controlled conditions should be conducted. The fact that this patient has been subjected to lobectomy for nontoxic goiter on two previous occasions should arouse the suspicion that the thyroid may be responsible. It is often difficult to make a certain diagnosis of chronic low grade hyperthyroidism. Tachycardia, a tendency to an unstable nervous status, a

moderate increase in the basal metabolic rate, and finally the beneficial response to a therapeutic trial on iodine would support a diagnosis of hyperthyroidism. The symptoms of thyrotoxicosis in nodular goiter may be bizarre and individual symptoms such as sweating, in a given case may be out of all proportion to all other manifestations. Sweating at night, such as described, is a frequent observation in thyrotoxicosis and may even be unilateral. Partial thyroidectomy in nodular goiter is frequently inadequate in controlling hyperthyroidism. A very small nodule that has been left intact may be sufficient to cause persistence of symptoms.

The neurologic manifestations mentioned are probably on an entirely different basis, however, myoclonus may be aggravated by a hyperthyroid state.

If, on study, a persistent low grade hyperthyroidism can be demonstrated to be present the patient should probably be subjected to a third and more radical subtotal thyroidectomy at the hands of a surgeon experienced in thyroid work. Operative intervention, however, should be preceded by three or four weeks on iodine therapy.

#### HEMATURIA IN PREGNANCY

*To the Editor*—I should like some advice about the following case. The urine of a woman four months pregnant is apparently entirely blood. Nothing else is distinguishable on urinalysis. She tells me that in the last three months of a previous pregnancy she experienced a similar condition. Her blood pressure has fallen from 120 to 110 systolic in the last two weeks. There is no apparent abdominal pain although she is very weak and the hemoglobin is 70 per cent. If she stays on an exclusive milk diet the urine remains clear but if she eats so much as a couple of bread the condition recurs. At present it will not return clear. Please omit name.

M D Pennsylvania.

**ANSWER.**—There is not sufficient information given on which to base a diagnosis. The appearance of large quantities of red blood cells in the urine during pregnancy is not a common occurrence. This is especially true when no other symptoms and urinary abnormalities are present. The causes are not essentially different from those which occur in the nonpregnant woman. Essential hematuria has been described but with the perfection of methods of urologic diagnosis the number of cases of hematuria without discoverable cause has diminished. Calculus and infections including tuberculosis, papillomas, tumors of the bladder and kidney, and nephritis would all have to be considered. There are three conditions that could easily be aggravated by the pregnancy and might cause a hematuria with relatively few symptoms: a toxemia, varicosities, and hydro-ureter with hydronephrosis.

The bleeding and coagulation time should be tested to rule out a hemorrhagic diathesis and, of course, a complete blood examination should be made to make sure that none of the diseases of the blood are present.

A cystoscopic and roentgenologic examination would doubtless be required to clarify the diagnosis. The treatment naturally would vary with the diagnosis. If facilities are available for making these examinations they should be done. Bland diet with abundant fluids if there is no edema keeping the lower bowel empty good position of the uterus determined by examination, and exaggerated Sims and knee-chest positions might all be advantageous. Iron should doubtless be administered to combat the tendency to anemia.

#### TRANSFUSION OF CITRATED BLOOD

*To the Editor*—I am having some difficulty with the indirect method of blood transfusion using citrated blood in the procedure. I use 50 cc. of sodium citrate to 450 cc. of donor's blood. I keep this citrated blood as near body temperature as possible while in the graduated cylinder used for transfusion. When there is only about 15 cc. of the citrated blood left in the cylinder I add about 50 cc. of physiologic solution of sodium chloride. I have been getting a jelly like coagulation following the addition of the saline solution. What I want to know is: Why do I get this coagulation? As the transfusion is a success the last procedure of putting the saline solution into the left citrated blood which causes the coagulation is what is giving the trouble. Is the amount of saline solution to the amount of blood citrated overbalanced? I am using Lilly's ampules 50 cc. also Swan Myers and Sharp & Dohme Normal Salt Tablets number 2 four tablets dissolved in 1 liter of water.

ROBERT L. CARSON, St Joseph Mo

Pharmacist Missouri Methodist Hospital

**ANSWER.**—Sharp and Dohme tablets number 2 contain sodium chloride calcium chloride and potassium chloride. The additional calcium contained in these tablets disturbs the proper equilibrium between the sodium citrate and the normal blood calcium which is responsible for the fact that the blood remains fluid. If physiologic solution of sodium chloride is used, which contains 0.9 per cent sodium chloride but no calcium, the phenomenon that is described will not occur.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

- ALABAMA Montgomery July 11-14 Sec., Dr J N Baker 519 Dexter Ave. Montgomery
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY. The general oral clinical and pathological examination will be held in Milwaukee June 13 Sec. Dr Paul Titus 1015 Highland Bldg Pittsburgh
- AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee June 12 Sec. Dr W P Wherry 1500 Medical Arts Bldg Omaha
- CALIFORNIA Reciprocity San Francisco June 14 Regular San Francisco July 10-13 Los Angeles July 24-27 Sec. Dr Charles B Pinkham 420 State Office Bldg Sacramento
- COLORADO Denver July 5-8 Sec. Dr Wm. Whitridge Williams 422 State Office Bldg Denver
- CONNECTICUT Basic Science Prerequisite to license examination New Haven June 10 Address State Board of Healing Arts 1895 Yale Station New Haven. Regular Hartford July 11-12 Endorsement July 25 Sec. Dr Thomas P Murdock 147 W Main St Meriden Homoeopathic New Haven July 11 Sec. Dr Edwin C M Hall 82 Grand Ave New Haven
- DELAWARE Wilmington June 13-15 Sec. Dr Harold L Springer 1013 Washington St. Wilmington
- DISTRICT OF COLUMBIA Basic Science Washington June 29-30 Regular Washington July 10-11 Sec. Dr W C Fowler 203 District Bldg Washington
- FLORIDA Jacksonville June 12-13 Sec. Dr William M Rowlett Box 786 Tampa.
- GEORGIA Atlanta June 14-16 Joint Sec. Mr R C Coleman 111 State Capitol Atlanta.
- ILLINOIS Chicago June 27-30 Supt of Regis Mr Paul B Johnson State House Springfield
- INDIANA Indianapolis June 20-22 Sec. Dr William R. Davidson, 413 State House Indianapolis
- IOWA Iowa City June 6-8 Dir. Mr H W Grefe Capitol Bldg Des Moines
- KANSAS Kansas City June 20-21 Sec. Dr C. H. Ewing Larned.
- KENTUCKY Louisville June 7 Sec. Dr A. T. McCormack 532 W Main St Louisville
- MAINE Augusta July 5-6 Sec. Dr Adam P Leighton Jr 192 State St. Portland
- MARYLAND Regular Baltimore June 20-23 Sec. Dr Henry M Fitzhugh 1211 Cathedral St Baltimore. Homoeopathic Baltimore June 20-21 Sec. Dr John A Evans 612 W 40th St Baltimore.
- MICHIGAN Ann Arbor June 6-8 Detroit June 13-15 Sec. Dr J E McIntyre Hollister Bldg Lansing
- MINNESOTA Basic Science Minneapolis June 6-7 Sec. Dr J C McKinley 126 Millard Hall University of Minnesota Minneapolis Regular Minneapolis June 20-22 Sec. Dr E J Engberg 350 St Peter St St Paul
- MISSOURI St Louis June 7-9 Address State Board of Health Capitol Bldg Jefferson City
- NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II The examinations will be held at centers where there are five or more candidates June 26-28 and Sept 13-15 Ex Sec. Mr Everett S Elwood 225 S 15th St. Philadelphia
- NEBRASKA Omaha June 7-9 Dir. Bureau of Examining Boards Mrs Clark Perkins State House Lincoln
- NEW JERSEY Trenton June 20-21 Sec. Dr James J McGuire 1101 Trenton Trust Bldg Trenton
- NEW YORK Albany Buffalo New York and Syracuse June 26-29 Chief Professional Examinations Bureau Mr Herbert J Hamilton Room 315 Education Bldg Albany
- NORTH CAROLINA Raleigh June 19 Sec. Dr B J Lawrence 503 Professional Bldg Raleigh
- NORTH DAKOTA Grand Forks July 5-8 Sec. Dr G M Williamson 434 S 3rd St. Grand Forks
- OHIO Columbus June 6-9 Sec. Dr H M Platter 21 W Broad St., Columbus.
- OREGON Portland July 4-6 Sec. Dr Joseph F Wood 509 Selling Bldg Portland
- PENNSYLVANIA Philadelphia and Pittsburgh July 11-15 Sec. Mr Charles D Koch 400 Education Bldg Harrisburg
- RHODE ISLAND Providence July 6-7 Dir. Dr Lester A Round 319 State Office Bldg Providence
- SOUTH CAROLINA Columbia June 27 Sec. Dr A. Earle Boozer 505 Saluda Ave Columbia
- SOUTH DAKOTA Watertown July 18 Dir. Dr P B Jenkins Aubrey
- TEXAS Galveston June 20-22 Sec. Dr T J Crowe 918 1920 Mercantile Bldg Dallas.
- UTAH Salt Lake City June 28-29 Dir. Mr S W Golding 326 State Capitol Bldg Salt Lake City
- VERMONT Burlington June 21-23 Sec. Dr W Scott Nay, Underhill
- VIRGINIA Richmond June 21-23 Sec. Dr J W Preston 803 Medical Arts Bldg Roanoke
- WASHINGTON Basic Science Seattle July 13-14 Regular Seattle July 17-18 Dir. Mr Harry C Huse Department of Licenses, Olympia.
- WISCONSIN Basic Science Milwaukee June 17 Sec. Prof Robert N. Bauer 3414 W Wisconsin Ave. Milwaukee. Regular Milwaukee, June 27-29 Sec. Dr Robert E. Flynn 401 Main St. La Crosse
- WYOMING Cheyenne, June 5 Sec. Dr W H Hassel Capitol Bldg Cheyenne.

## Illinois January Examination

Mr Paul B Johnson, superintendent of registration, Department of Registration and Education, reports the written and practical examination held in Chicago, Jan 17-19 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Forty-four candidates were examined, 42 of whom passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Chicago Medical School	(1932) 79	81*	81*
Loyola University School of Medicine	(1932) 79	81*	81*
Northwestern University Medical School	(1932) 79	81*	81*
(1932) 81* 81* 84* 84* (1933) 79*	(1931)		85*
Rush Medical College University of Chicago	(1930)		84
(1932) 79* 82 83 84 84 85 86			
School of Medicine of the Division of Biological Sciences University of Chicago	(1932) 79 79 81*	81 82*	83
University of Illinois College of Medicine	(1931)		78*
(1932) 76* 76* 77 79* 80* 81 82 83 (1933) 76	(1930)		83
Washington University School of Medicine	(1931)		83*
University of Nebraska College of Medicine	(1930)		82*
Long Island College of Medicine	(1931)		79
University of Toronto Faculty of Medicine	(1913)		75
Medizinische Fakultät der Friedrich Wilhelms Universität Berlin	(1913)		76
Magyar Királyi Pazmany Petrus Tudományegyetem Orvosi Fakultása Budapest	(1913)		76
College	FAILED	Year Grad	Per Cent
Chicago Medical School	(1932)		70
McGill University Faculty of Medicine	(1926)		63

\*License withheld pending payment of fee

## Nevada Reciprocity Report

Dr Edward E Hamer, secretary, Nevada State Board of Medical Examiners, reports two physicians licensed by reciprocity with other states, Feb 6, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
California Medical College	(1885)		California
University of Oregon Medical School	(1918)		Oregon

## Book Notices

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1932. With the Comments That Have Appeared in The Journal. Cloth Price \$1 Pp 104 Chicago American Medical Association 1932

The successive volumes of these collected reports are designed to give permanent form to the Council's consideration not only of those products which have been rejected by the Council but also of those which show promise but which are not yet ready for general use by the medical profession, as well as those which stand accepted but in regard to the status of which there has arisen a question that needs clarification. The second and third categories are called, respectively "preliminary" and "special" reports, and these are often the most interesting features of the book. Certainly this is true in the case of the newly issued volume of 1932 reports.

The preliminary report on Thorotrast, a colloidal thorium dioxide preparation proposed for use in retrograde pyelography and for roentgen visualization of the liver and spleen by intravenous administration, is an excellent example of this class of reports. The articles on Nirvanol and Triethanolamine are also interesting and timely preliminary reports. Among the "special" reports are those on sulpharsphenamine and mercuriochrome which are of particular timeliness and effectiveness. Each report clarifies the present status of the drug concerned—the former on the basis of a questionnaire circulated among leading syphilologists, and the latter on the basis of independent bacteriologic investigation, done by consultants of the Council. Among the reports on products definitely rejected for inclusion in New and Nonofficial Remedies, those of particular interest to physicians are Amertan an unoriginal mixture of tannic acid and merthiolate in a water soluble jelly, marketed under a proprietary, uninforming name. Antiopin a mixture of indefinite composition offered under a nondescriptive therapeutically suggestive name and marketed in a way that may foster the drug habit, Eubetin, another insulin substitute for oral administration marketed under a proprietary uninforming,

name with unwarranted claims, Ferro Copral, a mixture of saccharinated ferric oxide, manganese citrate and copper proteinate proposed for use in the treatment of pernicious anemia and marketed under a proprietary name with unwarranted therapeutic claims, Hepatex P A F, a liver preparation proposed for intravenous use and marketed under a proprietary and insufficiently descriptive name with no satisfactory evidence of the safety of its recommended intravenous use, Bi So Dol an unscientific "alkalinizing" mixture offered under an uninforming proprietary name with exaggerated and unwarranted claims of therapeutic usefulness, Gan-Aiden, consisting mainly of the well known ethyl aminobenzoate (benzocaine), a preparation of undeclared composition marketed under a noninforming, proprietary name, Myodin, Subidin and Sanguodin unscientific preparations of iodine marketed with unwarranted claims and indefinite, incorrect statements of composition, under proprietary uninforming names, and Tonikum Roche (now Elixir Arsylene Compositum-Roche) a "shotgun" proprietary "tonic" marketed with misleading therapeutic claims.

This volume should be on the shelves of all progressive physicians, pharmacologists and students. It is a convenient and compendious guide to the latest critical thought in pharmacology and therapeutics.

Kurzes Handbuch der Ophthalmologie. Herausgegeben von F. Schiöck und A. Brückner. Band II. Physiologie. Optik. Untersuchungsmethoden. Bakteriologie. Bearbeitet von A. Brückner, W. Comberg und anderen. Paper. Price 125 francs. Pp 1079 with 630 illustrations. Berlin Julius Springer 1932.

Within the appointed time has appeared the final volume of the so called Short Handbook of Ophthalmology, concluding a monumental work that is undoubtedly the most valuable reference series in ophthalmology that has ever appeared. This statement is made advisedly, for although the Kurzes Handbuch has not the voluminousity the elaborate bibliography or the discussion of case reports that characterize the Graefes-Saemisch Handbuch der gesamten Augenheilkunde, it has the advantage of being brought down to the present and has been completed within a reasonable time. The cost is high, averaging about 140 marks per volume, but the value is there. This volume, labeled the second, contains the following divisions: Physiology of the Nutrition and Circulation of the Eye, by Otto Weiss of Königsberg, Morphologic Changes in the Retina Under the Influence of Light by Karl vom Hofe of Cologne, The Visual Purple and Chemical Changes in the Retina, by Rudolf Dittler of Marburg, Electrical Processes of the Visual Organ by Arnt Kohlrausch of Tübingen, The Light Sense by Max Comberg of Berlin. The Color Sense, by Rudolf Helmholtz of Danzig, The Physiology of Optical Perceptions, by Rudolf Dittler of Marburg, Refraction and Accommodation, by Heinrich Erggelet of Jena, The Theory of Spectacles, by Heinrich Erggelet of Jena. The Clinical Methods of Examination, by Arth Brückner of Basel, and The Bacteriology of the Eye, by Max zur Nedden of Düsseldorf. This volume maintains a standard set by its predecessors, in thoroughness of material presented, in completeness of bibliography, and in general physical make-up. The seven volumes form a reference work indispensable to every library and scientific ophthalmologist.

American and Canadian Hospitals. A Reference Book Giving Historical, Statistical and Other Information on the Hospitals and Allied Institutions of the United States and Possessions and the Dominion of Canada. Edited by James Clark Field with the Cooperation of the American Hospital Association. Cloth Price \$10 Pp 1,600 Minneapolis: Midwest Publishers Company 1933.

This is a reference work giving historical statistical and other information of the hospitals of the United States and Canada. In the development of the work the publisher has had the cooperation of numerous officers of the American Hospital Association, as well as other persons interested in hospital service. The book opens with a brief history of the American Hospital Association, followed by a statement concerning the Council on Medical Education and Hospitals of the American Medical Association, the Department of Hospital Service of the Canadian Medical Association, Canadian Hospital Council, the American College of Surgeons, the Catholic and Protestant Hospital Associations, the American and Canadian Nurses' Associations, the League for Nursing Education and the Association of Hospital Workers. There are also statements about the American Sanatorium Association and

the Association of Record Librarians of North America and the American Occupational Therapy Association. There follow then in geographic order, by states and cities, records of all of the hospitals and sanatoriums in the United States, giving first of all the histories of the institutions, their character, their rates, their staff, their equipment, the trustees, the bed costs, average attendance, training schools for nurses and incoed, practically all the important information that any one might desire. Nothing is said as to the manner in which the information was collected but it is presumed that it was done by the questionnaire method. The book concludes with a series of appendices providing the history of numerous organizations related to the hospital field from every possible point of view. There are, for example, a life of Dorothea Dix and one of Florence Nightingale as well as statements concerning the history of the Commonwealth Fund, the Rosenwald Fund, the Duke Endowment and similar organizations. The book is an exceedingly useful work of reference for any one in the medical field.

*Fèvre boutonneuse. Fèvre exanthématique du littoral méditerranéen.* Par D. Olmer, professeur de clinique médicale à la Faculté de médecine de Marseille et Jean Olmet, chef de clinique médicale à la Faculté de médecine de Marseille. Collection médecine et chirurgie pratiques no 57. Paper. Price 17 francs. Pp 104 with 10 illustrations. Paris: Masson & Cie 1933.

The authors bring together in this treatise the facts at present known about a type of spotted fever of the Mediterranean littoral, a disease first designated as 'fièvre boutonneuse' by Conor and Bruch in 1910 in Tunis and to which this name was later restricted by the first International Congress of Hygiene at Marseilles. The disease is clinically and immunologically distinct from true typhus fevers (epidemic and endemic types) is transmitted by dog ticks (*Rhipicephalus sanguineus*), and is quite uniformly benign in character. It is a disease of summer occurring in foci in the country from one year to another. The history of the disease is reviewed, its etiology and epidemiology are discussed and a description of the clinical studies is given. There are also chapters on the laboratory observations, nosology, prophylaxis and treatment, and an extensive bibliography. It is an important contribution to knowledge of the typhus fevers.

*Indigenous Drugs of India. Their Medical and Economic Aspects.* By R. N. Chopra, M.A., M.D., Lieut. Colonel Indian Medical Service. Cloth. Price Rs. 15/- Pp 605. Calcutta: Art Press 1933.

With anticipation of possible surprises one opens this book, having so romantic a title and bearing on its front page Longfellow's

Come Wander with me she said  
Into regions yet untrod  
And read what is yet unread  
In the manuscripts of God.

One is not disappointed. It is the first book of this kind to be permeated by the critical spirit of modern pharmacology. The author fully understands the herculean nature of the task of attempting to clean out the Augean stable of the ancient Hindu medical lore. He points out that India was really the cradle of the world's medical knowledge, which was laid down most especially in its Ayurveda (2500-600 B.C.), and that there are unmistakable evidences of the influence of the Hindu materia medica on the Greek and Roman and through these on Arabic materia medica. With the conquest of India by the Moslems, the Arabic system was introduced and the Ayurvedic methods were discarded. In other words, this knowledge of Hindu origin, no doubt changed, was reimported into India by its conquerors, and the same thing happened again with the establishment of the British rule. It is freely admitted that, in this process the ancient knowledge has been so much refined and improved that it bears no resemblance to its original source. The author proposes to apply modern methods of extraction and assay, of pharmacodynamic and clinical study to the Ayurvedic materia medica at present discarded by the Western system of medicine though still largely used by the people of India. The research work on indigenous drugs, initiated by the author at the Calcutta School of Tropical Medicine has three main objects in view: to make India self supporting in the production of medicines; to discover remedies that might be employed by the exponents of 'Western medicine,' and to develop means of medicinal economy to render the necessary remedies available to the great masses of India

whose economic condition is low. There is no doubt that India, which could supply the whole of the civilized world with medicinal herbs, is at present shamefully exploited by manufacturers of ethical as well as of other proprietary medicines, who in many instances get from India the raw material at a pittance and reintroduce the finished product at an enormous increase in price. Readers in this country will of course, be chiefly interested in the second of the avowed aims and from this standpoint the book merits the attention of progressive pharmacologists and of enterprising manufacturers all over the world.

*Neuropathology. The Anatomical Foundation of Nervous Diseases.* By Walter Freeman, M.D., Ph.D., D.N.B., Professor of Neurology, George Washington University. Cloth. Price \$4. Pp 349 with 116 illustrations. Philadelphia & London: W. B. Saunders Company 1933.

At last a textbook of neuropathology has appeared that can be unhesitatingly recommended for the medical student. It is concise and written in a simple readable style within the capacity of the medical student to understand. The author has evidently attempted to select the essentials and present them clearly and attractively. The illustrations have been chosen for the same purpose and actually illustrate the text without being so numerous as to confuse the student. One might wish that drawings had been used, but the photographic reproductions are for the most part fairly clear. The common lesions are given the greatest space. The discussion of tumors is in line with the latest pathologic studies. The glossary is useful. The book should be popular with those who must teach neuropathology to medical students.

*A Standard Classified Nomenclature of Disease.* Compiled by the National Conference on Nomenclature of Disease. Edited by H. B. Logie, M.D., C.M., Executive Secretary, Fabrikoid. Price \$3.50. Pp 702. New York: Commonwealth Fund 1933.

This volume is the outcome of an effort carried on now for several years in an attempt to develop a uniform nomenclature for use by hospitals, health organizations and insurance companies. This nomenclature is supposed to include every disease that can be recognized clinically to avoid repetition and overlapping and to classify the diseases in a logical manner. It is supplemented by an alphabetical index to aid reference. The numbers of the international lists of causes of death are printed in italics after the titles of the diseases to aid comparison of the morbidity and mortality information. Code numbers are supplied to enable the use of punch card systems for tabulation. English terms are employed in preference to Latin and Greek, except as concerns diseases of the skin and eye, in which custom has entrenched Greek and Latin names. Diphthongs are avoided in English terms. Because of the difficulty of classifying certain conditions, such as lumbago, headache, rheumatism, jaundice and asthma, a special supplementary list of such terms is provided in an appendix which thus forms a useful guide to fields for investigation.

The compilers of this book have been familiar with nomenclatures previously prepared by other groups. The volume they have prepared is probably as good as could be developed by any type of organization. It should be given careful trial so that its merits and demerits may be well established before the publication of another edition.

*Herzneuosen und moderne Kreislauftherapie.* IX Fortbildungs-Lehrgang in Bad Nauheim 16-18 September 1932. Herausgegeben von der Vereinigung der Bad Nauheimer Ärzte. Boards. Price 10 marks. Pp 159 with 20 illustrations. Dresden & Leipzig: Theodor Steinkopf 1932.

The fifteen chapters represent lectures delivered during the course of instruction at Bad Nauheim in September 1932. Some of these chapters have already appeared as articles in medical journals. The subjects are handled by men from various cities in Germany. That the chapters vary widely as to excellence of content as well as manner of presentation goes without saying. One may be sure, also, that the virtues of Bad Nauheim as a suitable place to which to refer patients for the treatment of cardiac disorders are not overlooked. Three of the authors register from this resort. Five chapters deal with cardiac neuroses, six are devoted to the modern treatment of circulatory disorders. Four deal with various topics related, though less intimately, to the main subjects considered during the course.

## Medicolegal

### When Employee May Reject Employer's Physician

(*Wingate v Evans Model Laundry (Neb)* 244 N W 635)

The claimant, in the course of her employment, undertook to lift a bag weighing 102 pounds. She twisted and strained herself, felt a sudden pain in her abdomen and back, and became faint. After a short period of rest she resumed work, although apparently still partly disabled. Her employer sent her to a specialist in diseases of women who diagnosed her case as a prolapsed uterus second degree traumatic in origin. He insisted on an operation although the employer's regular physician a specialist in surgery advised against it, since he could find no evidence of prolapse. The operation was performed but it gave no relief nor did other treatment administered by physicians in the service of the employer. The injured employee thereupon consulted specialists of her own selection. They found, among other evidences of injury, a fracture of the transverse process of the fifth lumbar vertebra on the left side. The operation wound in the employee's abdomen had closed with a keloid formation—a raised thickened hard scar, tender to the touch and on movement. The patient still suffered great pain on moving and there was tenderness over the injured vertebra.

In the first instance the employee was paid compensation for nine weeks. After a hearing however the compensation commissioner dismissed her claim for further compensation. She appealed to the district court, which awarded her compensation for the services of her own physician who had assisted at the operation and compensation for temporary total disability. The court directed her employer and his insurer to furnish proper medical treatment by physicians selected or approved by her. The employer and his insurance carrier appealed to the Supreme Court of Nebraska.

Where the services furnished by an employer are inadequate or inefficient, it has been held that an employee is justified in changing to his own physician and is entitled to the reasonable costs of such service. *Kelley v Pacific Electric R Co*, 1 Calif 1 A C. Dec. 150. In the present case, said the court, the employee, being still totally disabled having received no benefit from the treatment given her by any of the doctors furnished by her employer and becoming desperate of ever being benefited by them was warranted in selecting other experts to take additional roentgenograms and to make a new diagnosis.

The employer and his insurance carrier contended that the district court erred in holding that the employee was entitled to further medical treatment by physicians to be selected or approved by her. The Supreme Court pointed out however, that an injured workman, while in a hospital or under the care of a surgeon is still in the course of his employment and so continues as long as his disability remains. *Ross v Erickson Construction Co* 89 Wash 634, 155 P 153 L R A 1916F 319. Moreover when an employer or an insurance carrier employs a physician for his injured employee and that physician makes a wrong diagnosis, the disability resulting from that erroneous diagnosis is compensable. *Johnson v Pacific Surety Co* 1 Calif 1 A C Dec 560. A patient subjected to a painful and unnecessary operation, by reason of which her disability is increased and tenderness pain and weakness continue is to be allowed compensation.

The Supreme Court however for other reasons, reversed the decision of the district court in favor of the employee, and remanded the case.

**Workmen's Compensation Acts Freezing of Foot Afflicted with Buerger's Disease**—The trial court found that the freezing of Wright's toes and foot resulted from the combined effects of Buerger's disease and of the wet, muddy, slushy and cold condition to which the foot was exposed and that this was an accident arising out of and in the course of his employment, and entered judgment in his favor. His employer appealed to the Supreme Court of Kansas. This court recognizes, said the Supreme Court, that peculiar circumstances make an event an accident when under ordinary circumstances it might not have been so, that an injury may be an

accident in the case of a person suffering from a disease, although it would not have been sustained by a perfectly healthy individual, and that if an existing disease is aggravated by accident the resulting injury is compensable. The court could find, however, no element of an accident conspicuous in this case. The climatic condition was normal for the season when the injury occurred and it was normal for the top of the ground to freeze and thaw. There was no storm flood or other sudden or unusual event. It would not have been an accident under the circumstances for a foot or a hand not sufficiently protected to freeze. While there are cases in other jurisdictions that hold freezing to be an accident, in most of them the freezing seems to have occurred under very unusual and peculiar circumstances. Such cases however failed to convince the Kansas court that the freezing of a diseased foot under the circumstances of this case constituted an accident within the meaning of the law. The award of the trial court in favor of the workman was therefore reversed.—*Wright v Keith (Kan)*, 15 P (2d) 429.

**Value of Physician's Services Provable by Lay Evidence**—A layman may be competent to testify as to the reasonable value of services of a physician, but this rule is based on the fact that the witness' qualifications to do so must appear in the record. *Millard v Northwestern Mfg Co*, 200 Iowa 1063, 205 N W 979.—*Wood v Branning (Iowa)*, 244 N W 658.

## Society Proceedings

### COMING MEETINGS

- American Medical Association Milwaukee June 12-16 Dr Olin West  
535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Chicago June 12-13 Dr Clifford G  
Crulce 636 Church Street Evanston Ill Secretary
- American Association for the Study of the Feeble Minded Boston May 31  
June 3 Dr Groves B Smith Beverly Farms Godfrey Ill Secretary
- American Association of Medical Milk Commissions Milwaukee, June  
12-13 Dr Harris Moak 360 Park Place Brooklyn Secretary
- American Dermatological Association Chicago June 8-10 Dr W H  
Guy 500 Penn Avenue Pittsburgh Secretary
- American Federation of Organizations for the Hard of Hearing Chicago  
June 18-22 Miss Betty C Wright 1601 35th Street N W Washing  
ton D C Secretary
- American Heart Association Milwaukee June 13 Dr Irl C Riggan  
450 Seventh Avenue New York Executive Secretary
- American Laryngological Rhinological and Otolological Society Chicago  
June 8-10 Dr Robert L. Loughran 33 East 63d Street New York,  
Secretary
- American Proctologic Society Chicago June 12-13 Dr Frank G  
Runyon 1361 Perkomen Avenue Reading Pa Secretary
- American Psychiatric Association Boston May 29 June 2 Dr Clarence  
O Cheney 722 West 168th Street New York Secretary
- American Society of Clinical Pathologists Milwaukee June 9-12 Dr  
A S Giordano 531 North Main Street South Bend Ind. Secretary
- American Therapeutic Society Milwaukee June 9-10 Dr Oscar B  
Hunter 1801 Eye Street N W Washington D C Secretary
- American Urological Association Chicago June 20-22 Dr Gilbert J  
Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Association for Research in Ophthalmology Milwaukee June 13 Dr  
Conrad Berens 35 East 70th Street New York Secretary
- Association for the Study of Allergy Milwaukee June 12-13 Dr Warren  
T Vaughan 808 Professional Building Richmond Va. Secretary
- Association for the Study of Internal Secretions Milwaukee June 12-13  
Dr F M Pottenger 1930 Wilshire Boulevard Los Angeles Secretary
- Conference of State and Provincial Health Authorities Washington D C  
June 5-6 Dr A J Chesley State Department of Health St Paul
- Maine Medical Association Poland Spring June 26-28 Dr Philip W  
Davis 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Boston June 5-7 Dr Walter L Burrage  
182 Walnut Street Brookline Secretary
- Medical Library Association Chicago June 19-21 Miss Marjorie J  
Darrach 645 Mullett Street Detroit Secretary
- Medical Women's National Association Milwaukee June 11-12 Dr Inez  
A Bentley 45 Cramery Park New York Secretary
- Montana Medical Association of Anaconda July 12-13 Dr E. G  
Balsam Box 88 Billings Secretary
- National Tuberculosis Association Toronto Canada June 26-30 Dr  
Charles J Hatfield Seventh and Lombard Streets Philadelphia  
Secretary
- New Jersey Medical Society of Atlantic City June 6-9 Dr J B  
Morrison 66 Milford Avenue Newark Secretary
- North Dakota State Medical Association Valley City May 31 June 2  
Dr Albert W Skusey 20½ Broadway Fargo Secretary
- Pacific Coast Oto-Ophthalmological Society San Francisco June 28-30  
Dr F C Cordes Fitzhugh Building San Francisco Secretary
- Rhode Island Medical Society Providence June 3 Dr J W Leech,  
167 Angell Street Providence Secretary

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### American Journal of Cancer, New York

17: 293-587 (Feb.) 1933

Suggested Methods for Standardization of Carcinogenic Activity of Different Agents for the Skin of Mice. C. C. Twort and J. M. Twort. Manchester, Lancashire, England.—p. 293

\*Carcinoma of Colon. Its Roentgenologic Manifestations and Differential Diagnosis. H. M. Weber. Rochester, Minn.—p. 321

Encephalography in Surgical Lesions of Brain. Report of Fifty Consecutive Cases. W. J. Gardner and B. H. Nichols. Cleveland.—p. 342

Roentgenographic Findings Associated with Tumors of Spinal Column, Spinal Cord and Associated Tissues. J. D. Camp and A. W. Adson. Rochester, Minn. and J. J. Shugrue. Washington, D. C.—p. 348

Roentgenology of the Pharynx and Upper Esophagus. H. K. Pancoast. Philadelphia.—p. 373

\*Sympathetic Tumors of Adrenal Medulla. Report of Four Cases. E. Scott and Marguerite G. Oliver, Columbus, Ohio, and Mary H. Oliver.—p. 396

Postmortem Observations of One Hundred and Eighteen Carcinomas of Large Bowel. W. G. Harding, 2d and F. D. Hankins. Los Angeles.—p. 434

Cultural Characteristics of Cysticercus Cysts and Two Cysticercus Tumors. W. Mendelsohn. Baltimore.—p. 442

**Carcinoma of Colon**—Weber points out that success in the treatment of patients afflicted with carcinoma of the colon will be advanced with the development of refinements in diagnostic methods. It is possible that a great many of the failures in treatment are attributable to the late stage at which the lesion was first recognized. Roentgenologic methods make it possible to recognize carcinoma in its early stages, often before there is adequate clinical evidence for suspecting its presence. The disease must be identified early in its course to permit the earliest possible institution of the therapeutic procedures indicated. Any changes in intestinal habit, evidenced by irritability, mucous diarrhea, alternating periods of constipation, localized pain and tenderness which do not tend rapidly to disappear, not to mention tumefaction, anemia and obstruction, are indications for a most thorough roentgenologic investigation of the intestinal tract. It is not out of place to recommend that this investigation be included in the routine yearly examinations. Such measures are necessary to increase the operability of the malignant lesions encountered, and simultaneously will offer much more reasonable hope for satisfactory end-results.

**Sympathetic Tumors of Suprarenal Medulla**—Scott and his associates present 158 cases of tumors with their origin in one or both suprarenal medullas, collected from the literature and classified on the basis of their structural differentiation. They also report four cases of sympathicoblastomas from their laboratories. The Pepper type of tumor of the suprarenal medulla (1) may originate in the right, the left, or both suprarenals, (2) frequently is congenital, (3) occurs in the cases reviewed at an average age of 15 months when primary in both suprarenals, 2.25 months when primary in the right, 15 months when in the left, (4) was found in thirty cases from the literature and in one of the authors' cases, and (5) is found only in the completely undifferentiated class of tumors. The Hutchison type of suprarenal tumor (1) was found in thirty-eight cases from the literature, (2) may originate in either suprarenal but was not found when the tumor was primary in both, and (3) occurs at an average age of 85 years when primary in the left, at 3.5 years when primary in the right suprarenal. Both Pepper and Hutchison tumors when originating in the right suprarenal occur at earlier ages than do those in the left suprarenal. The younger the patient, the more undifferentiated the tumor elements. The more undifferentiated the tumor, the greater the number of metastases and

the greater the degree of malignant changes. Tumors with atypical metastases occur, as a rule at older age levels and are more mature in structure. Sex does not appear to be a factor in the incidence of these tumors. The conclusions of Frew as to the relationship of the type of metastasis to the seat of the primary tumor do not seem to be borne out by a study of a larger number of cases. Any attempt at an explanation of the underlying factors determining the type of metastasis is at present theoretical. Whether sympathicoblastomas, especially of the Pepper type, are truly metastatic, or whether the foci are heterotopic in origin has been discussed in the literature. According to Wiesel, rests of sympathetic building cells may occur in early fetal life on the under surface of the liver. It is conceivable that as the liver grows these cells may be carried into the hepatic tissue with the anastomosis of the vitelline veins and be widely distributed with the blood vessels. Matzdorff, also, thinks that the liver tumors are not true metastases but are primary from fetal rests. The distinctly earlier age at which the Pepper type appears might argue for the theory of a systemic origin of this type. However in the records of all types of malignant sympathetic suprarenal tumors and in one of the authors' cases a probable congenital Pepper type, tumor cells were found filling the lymph nodes and blood vessels of both the primary and the secondary growths. This fact is evidence for a genuine metastasis as one means at least of the distribution of the tumor masses.

### American Journal of Diseases of Children, Chicago

45: 229-460 (Feb.) 1933

\*Septicemia in the New-Born. Ethel C. Dunham. New Haven, Conn.—p. 229

Experiments on Antibacterial Properties of Pyridium and Serenium. J. B. Gillespie. Rochester, Minn.—p. 254

\*Excretion of Xylose as Measure of Renal Function in Children. Ella H. Fishberg and L. Friedfeld. New York.—p. 271

Diphtheria and Diphtheria Carriers in Hospitals for Care of Children. Incidence, Control and Determination of Virulence. Significance of Routine Admission Cultures. S. C. Peacock and Marie Werner. Chicago.—p. 279

Acid Base Balance of New-Born Infants. III. Influence of Cow's Milk on Acid Base Balance of Blood of New-Born Infants. Eleanor Marples and V. W. Lippard. New York.—p. 294

\*Resolving Exudates in Pulmonary Tuberculosis of Childhood. Study I. H. S. Reichle, Cleveland.—p. 307

Tetany in Very Young Infants with Especial Reference to Etiology. P. Cohen. New York.—p. 331

**Septicemia in the New-Born**—Dunham reports thirty-nine cases of septicemia in new-born infants occurring during a period of five years at the New Haven Hospital. The final diagnosis, based on the growth of organisms from the blood, was usually corroborated by clinical, and in many cases by postmortem examination. The commonest organisms found were the streptococcus, the staphylococcus and *Bacillus coli*. Clinically, septicemia due to the streptococcus seemed to differ from other types of septicemia by the absence of jaundice and bleeding, by the less frequent enlargement of the spleen and by the more frequent appearance of cutaneous infections, omphalitis, peritonitis and meningitis. Streptococcus septicemia invariably had a fatal outcome. In the cases of septicemia caused by the staphylococcus or by *B. coli* on the other hand jaundice was a common symptom, occurring in more than half of the cases in the two groups. Bleeding took place in about half of the cases in the staphylococcus group and in about a third of the cases in the *B. coli* group. The spleen was frequently enlarged (in half or more of the cases) in the two groups. Anemia, however, was less common in staphylococcus septicemia than in that caused by the streptococcus and *B. coli*. Infection of the urinary tract was found only in cases of *B. coli* septicemia. Staphylococcus or *B. coli* septicemia was not invariably fatal.

**Excretion of Xylose**—Fishberg and Friedfeld describe a renal function test based on the oral administration of xylose. The normal kidney concentrates more than 25 per cent of the xylose in the urine after the ingestion of 1 Gm. of xylose for every 3 pounds of body weight, and the xylose is practically removed from the blood stream within five hours. The functionally deficient kidney concentrates less xylose and retains it for a much longer period in the blood. The kidney function may thus be estimated in the blood of infants when the collection of urine is difficult. Their technic is as follows: After limitation of the intake of fluids from the preceding evening,

specimens of blood and urine are taken in the morning. For every 3 pounds of body weight 1 Gm of xylose up to a maximum of 50 Gm is given in lemonade. Specimens of blood are collected at one and a half, three and five hours. Specimens of urine are taken at one, two, five, eight and twelve hours, and then another twelve hour specimen of the urine is taken. Quantitative reduction tests are made on the specimens of urine. Yeast is shaken with ten times the volume of water and centrifuged. The supernatant fluid is poured off and this process is repeated until the supernatant liquid no longer shows any reducing power with a Benedict solution. A 10 per cent solution of this yeast is then made. Oxalated blood, 1 cc is dropped into 7 cc of this solution and allowed to stand for two minutes. Two cubic centimeters of tungstic acid is then added and the Folin-Wu determination of reducing substance done.

**Resolving Exudates in Pulmonary Tuberculosis.**—On the basis of a critical review of the literature and in the light of personal clinical and pathologic experience, Reichle has reached the conclusion that resolving lesions are of three types: (1) simple atelectases, (2) nontuberculous lobar or bronchopneumonias and (3) retrogressive tuberculous pneumonias. The exact relative incidence of the three lesions is not known, but it is probable that the retrogressive tuberculous pneumonias predominate. This is without doubt true for the lesions of long duration that lead to resolution. Since resolution is possible in almost every form of tuberculous inflammation, there is no reason for calling on any unusual mechanism to explain the retrogressive tuberculous exudates. Clinically, the only reliable criterion for the diagnosis of the retrogressive type of tuberculous pneumonias is the course of the disease. This involves the ultimate complete or almost complete resolution of the process. The necropsies heretofore reported have dealt with the stage prior to possible resolution or after resolution was complete, and therefore have contributed little to the solution of this problem. A decisive contribution would be made by repeated biopsy examinations, as in the case of Rubinstein.

### American Journal of Ophthalmology, St. Louis

16 97 191 (Feb.) 1933

- Origin of Intra Ocular Pressure R. Sondermann, Berlin, Germany—p 97  
 Pantocain as Local Anesthetic in Ophthalmology W. H. Wilmer and R. T. Paton, Baltimore—p 106  
 Changes of Optic Nerve Resulting from Pressure of Arteriosclerotic Internal Carotid Arteries O. Saphir, Chicago—p 110  
 Premortuary Lid Edema in Typhoid Group S. J. Beach, Portland, Maine—p 119  
 Management of Dense Secondary Cataract T. C. Lyster, Los Angeles—p 122  
 Cilia in Anterior Chamber H. F. Graff, Baltimore—p 126  
 Osteitis Deformans with Optic Nerve Atrophy Case Report H. S. Kuhn, Hammond, Ind.—p 128  
 Diagnosis of Trachoma H. J. Howard, St. Louis—p 132

### American Journal of Pathology, Boston

9 1 147 (Jan.) 1933

- Herpetic Infection of Chorio-Allantoic Membrane of Chick Embryo J. R. Dawson, Jr., Nashville, Tenn.—p 1  
 Cellular Inclusions in Cerebral Lesions of Letargic Encephalitis J. R. Dawson, Jr., Nashville, Tenn.—p 7  
 Tuberculous Vegetations of Trunk of Pulmonary Artery P. Gross, Cleveland—p 17  
 Micro-Incineration Studies of Human Coronary Arteries D. Y. Ku, Cleveland—p 23  
 Experimental Fat Embolism of Heart S. A. Szurek and Z. G. Czaja, Chicago—p 47  
 Body Length and Organ Weights of Infants and Children Study of Body Length and Normal Weights of More Important Vital Organs of Body Between Birth and Twelve Years of Age J. M. Coppoletta and S. B. Wolbach, Boston—p 55  
 Multiple Liver Abscesses Caused by Leptothrix with Review of Leptothrix Infection P. N. Harris, Nashville, Tenn.—p 71  
 Histologic Study of Case of Eastern Type of Rocky Mountain Spotted Fever P. N. Harris, Nashville, Tenn.—p 91  
 Metastatic Calcification Occurring in Myelogenous Leukemia D. A. DeSanto, New York—p 105  
 Myeloblastic Sarcoma of Scapula Associated with Chronic Splenomyelogenous Leukemia F. S. Dubois, Tuscaloosa, Ala.—p 113  
 Reticulosarcoma (Reticulosarcoma) of Cerebral Hemisphere Report of Case N. C. Foot and S. Cohen, Cincinnati—p 123  
 Experimental Study of Effects of Potassium Bichromate on Monkey's Kidney W. C. Hunter and J. M. Roberts, Portland, Ore.—p 133

**Multiple Liver Abscesses Caused by Leptothrix.**—Harris reviews the literature pertaining to leptothricosis pathogenic to man and reports a case of leptothricosis in which

multiple liver abscesses were formed, with rupture of one abscess into the base of the right lung and formation of a lung abscess and rupture of another in the left lobe of the liver, leading to the production of pericarditis. The organism was isolated in pure culture from the liver and successfully carried in vitro through many generations. No other organisms were present in the lesions. Experimental work with the organism showed it to be slightly pathogenic for rabbits and guinea-pigs. This organism has apparently never been previously encountered.

### American Journal of Syphilis, St. Louis

17 1 160 (Jan.) 1933

- Some Practical Problems in Control of Syphilis W. Clarke, New York—p 1  
 Syphilis in Euphrates Arab Section II Clinical Study of Arab Syphilis E. H. Hudson, Deir-az-Zor, Syria—p 10  
 \*Differential Effects of Arsphenamine and Tryparsamide H. C. Solomon, S. H. Epstein and A. Berk, Boston—p 45  
 Fatalities Following Use of Neosarsphenamine Discussion of Examples of Three Unusual Types of Reaction A. Cantarow and B. L. Crawford, Philadelphia—p 53  
 \*Treatment of Syphilis with Hyperpyrexia Produced by Diathermy N. N. Epstein and S. B. Paul, San Francisco—p 72  
 \*Electrocardiographic Findings in Primary and Very Early Secondary Syphilis L. Chargin and S. S. Paley, New York—p 82  
 Serodiagnosis of Syphilis Evaluation of Certain Complement Fixation and Precipitation Methods G. A. Denison and Evelyn G. McDonald, Birmingham, Ala.—p 90  
 Comparison of Results Obtained with Kahn, Kline, Hinton, Meinicke, Sachs-Georgi and Rosenthal Tests for Syphilis A. L. Burdon and I. B. Duggan, St. Louis—p 110  
 Modification of Deiterle's Method for Demonstrating Spirochaeta Pallida in Single Microscopic Sections A. A. Krajan, Los Angeles—p 127

**Effects of Arsphenamine and Tryparsamide.**—Solomon and his associates state that a distinct difference between arsphenamine and tryparsamide is shown by their opposite effects in systemic syphilis and neurosyphilis, in sodoku (rat bite fever) and in malaria. Arsphenamine is more effective in early and late systemic syphilis, presenting skin, mucous membrane and bone lesions, whereas tryparsamide is more effective when the central nervous system is involved. Arsphenamine cures sodoku, whereas tryparsamide does not but, nevertheless it modifies the skin or local lesions as effectively as does arsphenamine. Arsphenamine is a plasmodicide and cures inoculation malaria, whereas tryparsamide has no noticeable effect either on the plasmodia in the blood or on the course of the fevers. The authors therefore conclude that arsphenamine is both a spirocheticide and a plasmodicide, while there is no evidence that tryparsamide has any direct lethal effect on the *Spirochaeta pallida*, the *Spirochaeta morsus-muris* or the plasmodia of inoculation tertian malaria. The beneficial action of tryparsamide on syphilis of the nervous system must be founded on some other characteristic. The results of the experiences in sodoku suggest that there is a stimulation to the local tissue which heals promptly with out destruction of the spirochetes in the blood stream. How this stimulation is produced is not at all clear. One may be justified in assuming that, as in the case of the local beneficial action in sodoku, so in syphilis of the central nervous system, tryparsamide has a local action within the local areas of the nervous system.

**Treatment of Syphilis with Hyperpyrexia.**—Epstein and Paul treated a group of twenty-eight patients with various forms of syphilis of the central nervous system by means of hyperpyrexia produced by diathermy. They used a diathermy apparatus capable of elevating the body temperature to 41.1 C. (106 F). They employed, with some modifications, the technique of Neymann and Osborne. Striking improvement was noted in thirteen patients with tabes dorsalis. The relief of pain was an outstanding feature. Improvement was noted in patients with other types of syphilis of the central nervous system, but this was not as marked as in the tabetic group. Serologic changes did not parallel the clinical improvement. One fatality occurred early in this work. The patient was a man, aged 67, with an extremely demented type of dementia paralytica. He was obviously a poor physical risk, but because of the rapid progress of his dementia his private physician felt the risk justifiable. Death followed the first treatment. His temperature rose to more than 106.8 F. In this patient a secondary rise in temperature occurred three hours after the

current was shut off. His blood pressure was 220/0 five hours before death and 90/0 a few moments before.

**Electrocardiographic Observations in Syphilis**—Chargin and Paley studied for electrocardiographic changes fifty cases of early syphilis of duration not longer than three months. All the patients were young adults below the age of 35, with the exception of three who were between 35 and 40. Care was taken to exclude all other diseases that might be responsible for cardiovascular changes, such as rheumatism, chorea, hypertension, arteriosclerosis and acute infectious diseases. Thirteen patients, or 26 per cent, had clinical right axis deviation. Three, or 6 per cent, had an index below 10. Five, or 10 per cent, had an index between 10 and 15, and the remaining five, or 10 per cent, had an index over 15. The high percentage of right axis deviation would seem to indicate that it is more than a mere coincidence. It may have some bearing on the syphilitic infection. Further observations are necessary to determine this. Four patients, or 8 per cent, showed definite myocardial involvement, as evidenced by changes in the T wave. One case showed isoelectric T waves in leads II and III, three cases showed definite inversion of the T waves in leads II and III, the last three were associated with definite right axis deviation with an index over 15.

### Annals of Internal Medicine, Ann Arbor, Mich

G 855 1012 (Jan) 1933

\*Clinical Significance of Leukopenia with Especial Reference to Idiopathic Neutropenia. S. R. Mettier and H. T. Olsan, San Francisco—p 855

Clinical Study of Graves' Constitution and Its Relation to Thyroid Disease. C. H. Fortune, Lexington, Ky.—p 869

Photosensitization. H. F. Blum, Berkeley, Calif.—p 877

Cardiac Complications of Trichterbrust. J. G. Carr, Chicago—p 885

\*Unusual Speech Disorder Following Encephalitis Lethargica. Its Interpretation and Therapeutic Management. A. Gordon, Philadelphia—p 895

\*Oral Administration of Metaphen in Treatment of Gastric and Duodenal Ulcers. C. M. Trippe, Ashbury Park, N. J.—p 901

Role of Bowel in Chronic Arthritis. E. F. Traut, Chicago—p 913

\*Sporadic Benign Rickettsial Fever with Occasional Exanthem. N. Toomey, Palmyra, Mo.—p 921

Obstinate Case of Intestinal Myiasis. W. B. Herms, Berkeley, Calif. and Q. O. Gilbert, Oakland, Calif.—p 941

Familial Congenital Clubbing of Fingers and Toes. Report of Case. O. B. Ragins and E. B. Freilich, Chicago—p 946

Complete Situs Transversus with Auricular Fibrillation and Flutter. Report of Case. H. A. Robinson, Detroit—p 948

Medical Poet of Middle Border. William Savage, Pitts. M.D. L. H. Roddis, Washington, D. C.—p 952

**Clinical Significance of Leukopenia**—Mettier and Olsan present five cases of severe leukopenia of obscure origin and call attention to the different types of bone marrow reaction occurring in the various cases, namely, aplasia of the bone marrow, depression of leukopoiesis only, hyperplasia of the leukopoietic tissue, and hyperplasia of the erythropoietic tissue. They also report a case of leukopenia associated with lymphangitis of the arm in a woman in whom recovery occurred during the course of the administration of nucleotide K-96. Among the 10,000 case histories of the patients cared for in the University of California Hospital from 1920 to 1931, examination of the blood revealed leukopenia in 1,167, or 11.67 per cent, of the cases. Of the 1,167 cases, leukopenia occurred in 611 females, or 52.4 per cent, and in 556 males, or 47.6 per cent. Leukopenia occurred frequently as a mild manifestation in patients with vague symptoms of one sort or another, such as chronic fatigue, 97 per cent of the cases of leukopenia were classified therefore as benign leukopenia of obscure origin. A table of the frequency incidence of leukopenia is given.

**Speech Disorder Following Epidemic Encephalitis**—Gordon describes the speech disorder in two patients following epidemic encephalitis, in whom in the beginning of their speech, the tongue rolls curls and places itself mostly on the right side. The muscles near the angles of the mouth and those of the chin contract more than the other muscles of the cheeks, so that two deep furrows appear on both sides of the mouth. It seems that all the other muscles of the patients' faces remain immobile while the lip muscles function. There was also a tendency for the lower jaw to droop while speaking. The author emphasizes the fact that in addition to an organic lesion ordinarily found in encephalitis, there are other factors of a functional character which may elucidate the nature of the

multiple postencephalitis disorders observed so frequently. An organic lesion alone will not explain its modus operandi in creating all these disorders, especially those of an affective character. Recognition of this principle is of high value in therapeutic endeavors. His two cases present an excellent illustration of this contention, as both patients had difficulties of an affective character at the onset of the disorder and as an outlet from the states of anxiety in which they found themselves, they developed a substitution or a compensation phenomenon in the form of a compulsion neurosis.

**Metaphen in Treatment of Ulcers**—Trippe gave a 1,500 solution of metaphen orally to patients with symptoms of chronic abdominal distress, in the dose of 4 cc. three times a day with gratifying results. His study includes an analysis of eighty-two patients, twenty-six with gastric and fifty-six with duodenal ulcers. He made complete roentgen studies of twenty-seven of these cases, and confirmed the diagnosis in many cases by a test meal and a microscopic study of the gastric contents. Relief from pain was obtained in practically all cases in an average of three days time. He observed no toxic effects. Complete disappearance of gastric and duodenal ulcers consequent on treatment with metaphen was demonstrated by means of roentgen studies made before and after treatment. He concludes that a possible explanation of the action of metaphen primarily a bactericidal agent, may lie in the part played by infection in the evolution of ulcers of the type considered, as has been recently emphasized by several authors.

**Sporadic Benign Rickettsial Fever**—An intensely febrile typhus-like disease of short duration was observed to cause a sharply localized group of cases in the west-central part of Illinois during the early part of August 1932. Toomey states that of the eleven known cases, ten were without exanthem. In one case on the fourth day there developed a lenticular ascending, nonhemorrhagic erythematous macular rash resembling the rash of mild Rocky Mountain spotted fever except that it disappeared suddenly with the lysis of the fever. The disease was characterized by an incubation period of about twelve days, sudden onset, abrupt rise of temperature (usually with headache, chilliness and vomiting) and a high continued fever which fell by abrupt lysis after three or four days. A remission of from one to two days was frequently followed by a secondary rise of temperature lasting one day. Constipation and an intense nonproductive conjunctivitis (not accompanied by lacrimation) were characteristic symptoms. Coryza, pharyngeal engorgement and chest symptoms were absent except for an occasional slight dry cough toward the end of the disease. Neuralgic and rheumatoid pains were absent, and the sensorium remained clear. Hyperhidrosis and a regional lymphadenopathy were occasionally observed. There was no mortality. The disease caused a slight leukocytosis due to a relative and absolute increase in the lymphocytes and large mononuclears. Considerable secondary anemia developed. Although the disease was undoubtedly insect borne, a primary sore at the site of inoculation could not be made out in any case. Small erythematous papules, the sites of insect bites were commonly observed to become anemic (white macules) following the termination of the fever. The vector was not identified but there was evidence suggesting that the virus was transmitted by a hymenopteron of the genus *Halictus* (family Halictidae). Agglutination tests against strains of *Proteus* X organisms showed an affinity for the nonindologenic or Kingsbury strains in addition to a moderate affinity for the X strains. The X strains were not significantly agglutinated. There was an inconstant and, at most, a slight increase in the agglutination titer during convalescence. Guinea-pigs were found moderately susceptible to the virus. The disease in guinea-pigs was without a noticeable scrotal lesion and was principally neurotropic, thus resembling epidemic typhus more than certain strains of endemic typhus or Rocky Mountain spotted fever. Inoculation of convalescent guinea-pigs with the virus or Rocky Mountain spotted fever showed that the guinea-pigs were susceptible to the spotted fever virus but appeared to have a partial or group immunity to spotted fever. Preliminary studies indicate that the disease occurs not uncommonly in a mild form, and that it is the cause of some of the cases heretofore called "summer flu" or influenza. Clinically and immunologically, it is necessary to recognize this disease as a separate entity. Serologically, it is related to the diseases having an affinity for the

nonindologenic (Kingsbury) strains of the Proteus X organisms. An approximate clinical similarity to the American mountain tick fever is noted.

## Annals of Surgery, Philadelphia

97 161 320 (Feb.) 1933

- Treatment of Fractures in Cincinnati General Hospital J A. Caldwell, Cincinnati—p 161  
Treatment of Joint Fractures R Colp and S Mage New York—p 177  
Late Results of Separation of Epiphysis J Ireland Chicago—p 189  
\*Fractures of Head and Neck of Radius J V Bohrer New York—p 204  
End Results of Carpal Scaphoid Fractures L E Snodgrass Philadelphia—p 209  
Reconstructive Operation for Nonreducible Fractures of Head of Humerus L Jones Kansas City Mo—p 217  
Elephantiasis Nostra G P Muller and C G Jordan Philadelphia—p 226  
Intracapsular Fractures of Neck of Femur Closed Double Screw Method for Reduction and Fixation Preliminary Report L Jones Kansas City Mo—p 237  
\*Localized Tuberculosis of Chest Wall R H Meade Jr Philadelphia—p 247  
\*Full Thickness Skin Graft Its Field of Applicability and Technical Considerations J H Garlock, New York—p 259

**Fractures of Head and Neck of Radius**—From his observation of twenty cases of fractures of the radius over a period of ten years and a review of the literature Bohrer concludes that 1 Fractures of the head and neck of the radius, in children should be treated conservatively unless there is marked displacement of the fragment 2 In cases of marked displacement of the fragment, early operation with replacement of the fragment is preferable to resection 3 If resection is done synostosis of the radius and ulna in the resected area will develop in about 50 per cent. This synostosis occurs several months after operation. 4 In resected cases a stable nonpainful joint may be expected 5 Flexion and extension are seldom limited 6 In resected cases an increased carrying angle always develops, apparently from a lack of growth at the proximal end of the radius 7 In adults, simple fracture with displacement, even if the fracture line involves the articular surface should be treated conservatively 8 In operative cases, resection of the entire head of the radius is the operation of choice A stable, nonpainful joint, without loss of function, may usually be expected

**Localized Tuberculosis of Chest Wall**—Meade reports three new cases of localized chest wall tuberculosis and states that there is a striking difference in the number of cases of localized chest wall tuberculosis seen in hospital practice This can be accounted for by the difference in attitude of the doctors referring patients to surgeons The process may arise by extension from foci in the lymph nodes of the chest wall or as a hematogenous infection In order of frequency the bony ribs come first the sternum and soft parts next and the cartilage last. Diagnosis can rarely be made before the cold abscess appears Examination of its contents will almost invariably settle the question. Treatment must be general and local Excellent results have been obtained by radical excision well beyond the limits of the involved tissue, removal of all exposed cartilage, and air-tight closure. Drainage should be used only in cases presenting mixed infection

**Full Thickness Skin Graft**—Garlock states that the full thickness skin graft has a fairly wide field of applicability It should be reserved to cover fresh surgical defects and should not be used for granulating wounds The pedicled skin flap should be used when the local condition requires more underlying tissue than a full thickness graft can supply There are numerous features in the use of this type of graft which the surgeon must recognize These include the great probability of necrosis if placed over bare bone or tendon future shrinkage, changes in color, the development of heavy scars at the edges, and the growth of hair The author presents an operative technic for full thickness skin grafts which includes complete excision of scar tissue, rigid asepsis, complete hemostasis, the application of firm even pressure over the grafted area, and complete fixation of the part by the use of appropriate splints, and strives to eliminate any form of trauma to the graft. Careful attention to the details of the postoperative care increases the chances of a successful take

## Arch of Physical Therapy, X-Ray, Radium, Chicago

14 69 124 (Feb.) 1933

- New Form of d Arsonvalization Short Waves A. Halphen and J Auclair Paris France—p 69  
\*Use of Cold Quartz Light in General Practice. H M F Behneman San Francisco—p 72  
Factors Influencing End Results of Electrosurgery C E. Ward Baltimore—p 78  
Surgical Diathermy in Treatment of Cervicitis with New Type of Flexible Spiral Electrode H E. Kimble Chicago—p 83  
Use of Radium in Benign Lesions of Nose and Throat G A. Robinson New York—p 86  
General Principles of Hydrotherapy J B Nylin Philadelphia—p 89  
Modern Concepts in Treatment of Superficial Malignant Growths J J Eller New York—p 95  
\*Radium in Lesions of Cornea Laura A Lane Minneapolis—p 99  
What Do You Think of Physical Medicine? Ethel M Shaul Philadelphia—p 105

**Cold Quartz Light in General Practice**—Behneman gives a summary of the results of cold quartz radiation in eighty-one cases including sluggish ulcers, burns, endocervicitis, fistulas and rectal ulcers, Vincent's infection (trench mouth), acne, boils and carbuncles, nasal antrum disease with sinus involvement and lesions of the urinary tract. He states the advantages of this type of generator as follows It is within the wavelength of high germicidal action It burns at a low temperature with possibilities of application directly to the skin. The official applicator has emission from its entire surface area The grid lamp may be moved, so that perpendicular ray exposure is possible at all times Little erythema is evidenced for the radiation produced There is a constancy of intensity The handling and use are safe and convenient because of its light weight and detachability There is usually a relatively low formation of pigmentation. There appears to be little of the red of the visible spectrum It may be operated while in motion The temperature at which it burns allows any design of applicator for insertion into body cavities

**Radium in Lesions of Cornea**—Lane states that radium has a beneficial and analgesic effect in a number of benign and malignant corneal lesions Among the benign lesions responding to radium therapy are ectasias, fistulas, keratitis vasculosa, keratitis vesiculosa, keratitis rosacea, tuberculosis involving the cornea, keratitis posterior, and keratitis ulcerosa in its various forms with or without hypopyon. One of the greatest fields of usefulness is in the thinning of leukomas and opacities of the cornea, and the earlier radium is used the better the result. In the malignant lesions radium appears to offer, in many instances, better results than surgery alone as there is less loss of tissue Considerable judgment is necessary as to the dosage. Frequent biomicroscopic studies are necessary to obtain the best results with radium in benign and malignant lesions of the cornea The application of radium to the cornea calls for a knowledge of the physics of radium and of the structure of the cornea and of the eye for supportive treatment of the patient, and should be undertaken only by those who are willing to give individual attention to its use

## Colorado Medicine, Denver

30 37 72 (Feb.) 1933

- Discussion of Some Recent Advances in the Commoner Nervous Diseases. T H Weisenburg Philadelphia—p 41  
Treatment of Burns N A Madler Greeley—p 46  
\*Mechanism of Edema T P Sears Denver—p 50

**Mechanism of Edema**—Sears reviews the various theories of the mechanism of edema He presents an outline of a new theory of nephritis, which explains edema on the basis of an increased avidity of the tissues themselves whereby water is held in the areas of edema and not presented to the kidneys for excretion The same situation is claimed for the metabolites He concludes that edema due to cardiac or nephritic causes is secondary to an imbalance between the filtration and osmotic pressures of the blood stream, plus changes in the permeability of the capillary walls and an increase in the avidity of the tissues themselves for water The local edema of venous obstruction and the edema of starvation belong in this group Inflammatory edema and possibly anemic edema is assignable to changes in capillary permeability secondary to traumatism, infection or anoxemia In all types of edema a normal protein diet is indicated with only such salt restriction as is consistent with the type of edema found

## Delaware State Medical Journal, Wilmington

5 23 46 (Feb.) 1933

- Precautions in Tonsil Operations, with Especial Reference to Blood Supply W O LaFollette Wilmington—p 23  
Practical Application of Blood Chemistry J A Kolmer Philadelphia—p 30  
Ludwig's Angina E L. Stambaugh Lewes—p 33

## Johns Hopkins Hospital Bulletin, Baltimore

52:119 172 (Feb.) 1933

- \*Skin Reacting Substances Present in Urine During Acute Streptococcal Infections E T Conybeare Baltimore—p 119  
\*Observations on a Case of Postoperative Hypoparathyroidism R Ellsworth Baltimore—p 131  
Studies in Experimental Syphilis \ Observations on Cross Inoculations with Heterologous Strains of Syphilitic Virus A M Chesney T B Turner and F H Grauer Baltimore—p 145  
\*Hyperproteinemia Associated with Multiple Myeloma Report of Case in Which an Extraordinary Hyperproteinemia Was Associated with Thrombosis of Retinal Veins and Symptoms Suggesting Raynaud's Disease. M M Wintrobe and Mary V Buell Baltimore—p 156  
Studies on Urea Splitting Enzyme Found in Gastric Juice L Martin Baltimore—p 166

**Urine in Acute Streptococcal Infections**—According to Conybeare, colloidal material extracted from the urine of patients suffering from acute infectious conditions associated with B-hemolytic streptococci is capable, in a high proportion of cases, of producing a delayed erythematous reaction when injected intradermally into susceptible subjects. Similar material extracted from the urine of clinically normal persons is by comparison on the same test subjects, relatively inactive as regards the property of producing a skin reaction. Such material from the urine of scarlet fever cases appears to contain the "erythrogenic toxin" (Okell) of the B-hemolytic streptococcus. In five of seven patients with acute pharyngitis, throat cultures showed that hemolytic streptococci of the B type were the predominant organisms. Positive reactions were produced by the extracts derived from four of these five patients. A similar procedure was carried out on the urine of three patients presenting a clinical diagnosis of erysipelas. The extracts obtained in all three cases gave positive reactions. Extracts made from four albuminous urines associated with streptococcal infection gave positive reactions.

**Postoperative Hypoparathyroidism**—Ellsworth reports a case of postoperative hypoparathyroidism in a Negro woman aged 36 in whom a daily calcium intake of 2 Gm and a limitation of the daily phosphorus intake to 1 Gm resulted in partial relief of symptoms and a rise of the serum calcium and phosphorus. Further limitation of the phosphorus intake to 0.27 Gm daily resulted in further relief of symptoms a slightly higher rise in serum calcium and a fall of serum phosphorus toward normal. Finally, when the patient was at home and exercising, the regimen was ineffective. Raising the calcium ingestion to 5 Gm daily by giving calcium chloride resulted in a return toward normal of the serum calcium, a fall toward normal of the serum phosphorus and a relief of symptoms. In other cases, in which similar ratios of phosphorus to calcium ingested have been tried, beneficial results have been obtained. The author places emphasis on the regulation of both the calcium and the phosphorus intake when treating hypoparathyroidism. The administration of viosterol was followed in his patient by precipitation of active tetany. He has made observations on the effect of the administration of a magnesium salt. Injection of parathyroid extract resulted in a rapid fall of serum phosphorus, a rise of serum calcium and symptomatic improvement.

**Hyperproteinemia Associated with Multiple Myeloma.**—Wintrobe and Buell observed in the blood of a patient who presented symptoms of coldness, blanching and a peculiar mottling of the extremities, as well as other signs of disturbed circulation a voluminous quantity of a substance which invariably was precipitated immediately on withdrawal of the blood from the body. This material was found to be protein in nature. Necropsy proved that the patient suffered from multiple myeloma. The author discusses the chemical nature of this protein and considers its relation to Bence-Jones protein. Among approximately 500 case reports of multiple myeloma, abnormality in the blood plasma has been found in only eight. Even in comparison with these cases, the author's case seems unique.

## Journal of Bacteriology, Baltimore

25 101 238 (Feb.) 1933

- Application of Statistics to Problems in Bacteriology I Means of Determining Bacterial Population by Dilution Method H O Halvorson and N R Ziegler Minneapolis—p 101  
Relation of Changes in Morphology and Metabolism in *Bacillus Coli* W F Lange St Louis—p 123  
Disappearance of the *Coli Aerogenes* Group in Natural Purification Processes as Determined by Direct Plate Counts C C Ruchhoff E W Coulter C L Adams and A L Sotter Chicago—p 143  
Single Cell Dissociation of Acid Fast Bacteria *Mycobacterium of Avian Tuberculosis* *Mycobacterium of 'Rat Leprosy'* M C Kahn and Helen Schwarzkopf New York—p 157  
Some Factors Involved in Biologic Production of Acetone and Butyl Alcohol L Weinstein and L F Rettger New Haven Conn—p 201

## Journal of Clinical Investigation, New York

12:1 246 (Jan.) 1933

- \*Studies on Gastric Secretion T G Klumpp Cleveland and M A Bowie Rosemont Pa.—p 1  
Studies of Basal Work and Output of Heart in Clinical Conditions I Starr Jr L H Collins Jr and F C Wood Philadelphia—p 13  
\*Treatment of Agranulocytosis with Adenine Sulphate P Reznikoff New York—p 45  
Studies in So-Called Water Intoxication F S Smyth W C Deamer and N M Phatak San Francisco—p 55  
Studies on Gallbladder Function IX Anion Cation Content of Bile from Normal and Infected Gallbladder C G Johnston I S Ravdin C Riegel and C L Allison Philadelphia—p 67  
Unavoidable Error in Differential Count of Leukocytes of Blood C W Barnett San Francisco—p 77  
Addis Sediment Count in Normal Children J D Lyttle New York—p 87  
Addis Sediment Count in Scarlet Fever J D Lyttle New York—p 95  
Effects of Temperature and of Tissue Pressure on Movement of Fluid Through Human Capillary Wall E M Landis and J H Gibbon Jr Philadelphia—p 105  
Note on Cutaneous Venous Blood Sugar Difference in Normal Males and Females and in Thyroid Disease L Jonas Philadelphia—p 139  
\*Inequality of Blood Pressure in Brachial Arteries with Especial Reference to Disease of Arch of Aorta H M Korns and P H Guinand Iowa City—p 143  
\*Gastric Secretion in Fever and Infectious Diseases H C Chang Peiping, China—p 155  
Collateral Respiration Spontaneous Reinsflation of Atelectatic Pulmonary Lobule by Collateral Respiration C M Van Allen and Y C Soo Peiping China—p 171  
Attempts to Produce Experimental Gastritis F D W Lukens Philadelphia—p 181  
Relation Between Plasma Protein Content, Plasma Specific Gravity and Edema in Dogs Maintained on Protein Inadequate Diet and in Dogs Rendered Edematous by Plasmapheresis A A Weech New York C E Snelling Toronto Canada and E Goettsch New York—p 193  
Effect of Serum Transfusion on Plasma Protein Depletion Associated with Nutritional Edema in Dogs A A Weech E Goettsch and E B Reeves New York—p 217  
Study of Etiologic Relationship Between Pellagra and Pernicious Anemia T D Spies and W Payne Cleveland—p 229  
Rates of Utilization of Thyroxine and Desiccated Thyroid in Man Relation Between Iodine in Desiccated Thyroid and Thyroxine W O Thompson L L McLellan Phebe K. Thompson and Lois F N Dickie Chicago—p 235

**Gastric Secretion**—Klumpp and Bowie made a total of 357 analyses on ninety-eight subjects under controlled conditions. They noted that in a given individual the secretion of acid in response to a uniform stimulus tends in general to remain within a broad range. Occasional wide fluctuations are, however encountered. One negative histamine test is not conclusive evidence of achlorhydria. The volume of gastric secretion in response to a uniform stimulus fluctuates widely, and no relation between volume and acidity is found. In a series of duplicate analyses, histamine elicited consistently higher values for free and total acid than the Ewald and alcohol tests. The maximum secretion of acid was attained between thirty and forty-five minutes after the injection of histamine. After the Ewald and alcohol tests, the maximum response came at the end of an hour or later. The alcohol test gave higher values for free acid than the Ewald meal, but the latter evoked higher total acidities in duplicate analyses. In duplicate analyses achlorhydria appeared more frequently after the Ewald meal than after alcohol, and least frequently after histamine. Administration of repeated gastric stimuli induced a temporary augmentation of acidity after each, followed by a pronounced falling off, suggestive of a fatigue phenomenon. There was no fundamental difference in the power of the three test meals to elicit this response. Atropine in moderate doses tends to prolong the high level of titratable acidity which ordinarily occurs after histamine. A previous breakfast tends to cause lower acid values and higher total acidities in response to a standard stimulus. Intravenous calcium chloride increases gastric secre-

tion. The authors discuss the theoretical and practical advantages of studying gastric function by means of the histamine stimulus

**Treatment of Agranulocytosis**—Reznikoff presents the results of adenine sulphate therapy in fifteen uncomplicated cases of agranulocytosis in which recovery followed in eleven of the patients. In severely complicated cases of agranulocytosis or in aleukemic leukemia and aplastic anemia adenine sulphate has not been effective in the doses used in this study. He observed that 1 Gm of adenine sulphate boiled in from 35 to 40 cc of saline solution, given warm intravenously three times daily for at least three days for an adult, is nontoxic, and he suggests that amount as the dose in treating agranulocytosis in adults. This is probably not a maximum dose, but in most patients who responded favorably it was found that with such quantities distinct improvement occurred in the symptoms, in decline of the fever and in an increase of granulocytes within forty-eight hours frequently within twenty-four hours. As much as 10.4 Gm has been given to a patient within seven days with no ill effects.

**Inequality of Blood Pressure**—Korns and Gunand analyze the data obtained by bilateral brachial pressure measurements in 1,000 normal subjects. What they have arbitrarily designated as a significant sphygmie inequality occurred 439 times in 378 persons. Significant inequalities in pulse pressures appeared in 274 persons. 67 of whom failed to show differences of 10 mm or more between the two systolic or diastolic levels, nearly three fourths of the higher pulse pressures were dextro-lateral. These pressures were measured simultaneously in the two arms, but for all practical purposes consecutive measurement gives equally satisfactory results. Sphygmie inequality without organic disease is probably always transitory and it is reasonably certain that all normal persons manifest it at one time or another. The inequality may involve only the systolic pressures or only the diastolic or both and if the two levels are disparate the inequality may be concordant (both right higher than both left, or vice versa) or discordant (right systolic higher than the left and left diastolic higher than the right, or vice versa). In some persons the higher pressure is irregularly heterolateral in others it appears to be always homolateral. There is no evidence that right-handedness or left-handedness plays any part. The physiology of transitory disparities in brachial pressures is not understood. Sphygmie inequality in the brachial or carotid arteries cannot be regarded as a sign of disease of the aorta or its branches, unless it can be shown to be permanent.

**Gastric Secretion in Fever and Infectious Diseases**—Chang studied the gastric function by the histamine method in 106 febrile Chinese patients. On the average there was a decrease of the gastric acidity to one third of the normal. The total chloride and the volume of secretion showed a similar but less marked change. The decrease of gastric function was proportional to the height of the fever. Anemia and general physical fitness played no important part. Thirty-three of the 106 patients showed achlorhydria, an incidence of 31 per cent. This is about eight times the normal incidence. Fifty-six patients were reexamined in convalescence. Of these, 90 per cent recovered their normal gastric function soon after the disappearance of fever. The incidence of "permanent" post-febrile achlorhydria was only 5 per cent, which is not much higher than is expected in a healthy Chinese population. Infectious diseases are probably not important causes of gastric anacidity. This definite but transitory impairment of the gastric function cannot be explained on the basis of dilution, nor can it be entirely attributable to duodenal regurgitation. The author suggests a hypothesis in which the pathologic change in the stomach during fever is compared with cloudy swelling in the kidneys. In both instances the functional disturbance tends to be transient.

### Journal of Comparative Neurology, Philadelphia

57 1 197 (Feb 15) 1933

- Studies of Cerebral Function in Learning. IX. Mass Action in Relation to Number of Elements in Problem to Be Learned. K. S. Lashley and L. E. Wiley. Chicago—p. 3  
The Reptilian Optic Tectum. G. C. Huber and Elizabeth C. Crosby. Ann Arbor Mich.—p. 57  
Origin and Course of Fasciculus Uncinatus (Russell) in the Cat with Observations on Other Fiber Tracts Arising from Cerebellar Nuclei. A. T. Rasmussen. Minneapolis—p. 165

### Journal of Infectious Diseases, Chicago

52 1 137 (Jan Feb) 1933

- \*Serologic and Cultural Studies of Meningococci with Especial Reference to Type V. Bess E. Segal. Philadelphia—p. 1  
Relation of Gastro-Intestinal Poison to Other Toxic Substances Produced by Staphylococci. O. C. Woolpert and G. M. Dack. Chicago—p. 6  
Attempt to Confirm Existence of Filtrable Cycle of Bacteria by Use of K Medium. C. V. Seastone and Mary B. Lawrence. Boston—p. 20  
\*Method for Securing Clear Serums from Milk of Cows and Goats for Agglutination Tests with Especial Reference to Undulant Fever. I. C. Hall and R. Learmonth. Denver—p. 27  
Colony Formation of Diplococcus Rubeolae (Measles). Ruth Tunnicliffe. Chicago—p. 39  
\*Further Attempts at Experimental Infection of Man with Bovine Strain of Brucella Abortus. P. Morales Otero. San Juan Puerto Rico—p. 54  
Precision Photomicrography in Bacteriology. R. R. Mellon. Pittsburgh—p. 60  
\*Flatulent Diarrhea Due to Clostridium Welchii. C. I. Nelson. Fargo N. D.—p. 89  
Medium for Isolation of Bacillus Pertussis. J. H. Bailey. Chicago—p. 94  
Production of Antipertussis Serum of High Titer. J. H. Bailey. Chicago—p. 97  
Infection of Accessory Sinuses in Vitamin A Deficiency. Role of Carotene in Infection of Upper Respiratory Tract. R. G. Turner and E. R. Loew. Detroit—p. 102  
Incidence of Anaerobic Filter Passing Organisms in Normal and in Abnormal Respiratory Tract Conditions. P. H. Long and Barbara Muellerschoen. Baltimore—p. 121  
Growth of Clostridium Botulinum on Synthetic Mediums. W. Burrows. Chicago—p. 126

**Studies of Meningococci**—Segal states that of the hundred strains of meningococci studied by agglutination and absorption tests, thirty-six were found to be type I, ten type II, twenty type III and twelve type IV. An indirect method of classification was resorted to in five cases. Rabbits were immunized with each of the strains, and the agglutination and absorption reactions of the homologous antisera were studied. Four were found to be of type IV and one of type III. Seventeen strains were found to differ serologically from any of the known types of meningococci. They formed a separate group distinguishable from the Gordon type strains by their agglutination and absorption reactions. The author does not consider the cultural and biochemical reactions of these seventeen strains sufficiently distinct to warrant their being placed apart as a new species. She proposes a fifth type for this group of seventeen strains, since the four existing Gordon types are differentiated purely on the basis of serologic differences. The seventeen strains forming a fifth type of meningococcus were all isolated from the spinal fluids of cases of clinical cerebro-spinal meningitis occurring in the Chicago epidemic of 1928 in which all the four known Gordon types were encountered.

**Method for Clear Serums for Agglutination Tests**—Hall and Learmonth recommend the use of chloroform, ether, benzene or carbon tetrachloride with rennet in securing clear milk serums from goats and cows for agglutination tests with *Alcaligenes melitensis*. The test tubes for the collection of milk samples are corked in the laboratory, each containing a few cubic centimeters of either solvent and a small amount of rennet extract. They are then taken to the dairy and used for the collection of each sample directly from the animal. Each tube is then shaken thoroughly for several minutes to extract the fat. On their return to the laboratory, the tubes are placed in the incubator at 37 C for an hour to coagulate the casein. They are then centrifuged for fifteen minutes at 2000 revolutions per minute to separate the milk serum, which will be found in a perfectly clear deep layer at the top, with a compact curd in the center and the solvent at the bottom. Milk serums collected in this manner may be preserved indefinitely without bacterial growth, owing to the germicidal action of the solvents. There is no interference with the agglutination test for *Alcaligenes melitensis* either by inhibition or by false agglutination. The authors also tested carbon disulphide and tetrachlorethane but found them unsatisfactory, although with both the milk serum separates at the top. But these two solvents definitely inhibit agglutination in the lower dilutions.

**Experiments with Bovine Strain of *Alcaligenes Abortus***—Morales-Otero gave three volunteer subjects the infected milk of a cow suffering from infection with *Alcaligenes abortus*. At the end of a six weeks period none of the subjects had at any time shown any symptoms of the disease, and their blood cultures and blood agglutination tests remained per-

sistently negative for *Alcaligenes abortus*. Two other volunteers inoculated one through normal and the other through abraded skin, with the strain isolated from the infected milk presented no symptoms of the disease and their blood cultures were persistently negative for *Alcaligenes abortus*. In the blood of the latter two persons, the author observed a transitory positive agglutination of the organism (in a 1:40 dilution) during the third and fourth weeks of the experiment.

**Flatulent Diarrhea Due to *Clostridium Welchii***—Nelson reports local epidemics of flatulent dysentery in which anaerobes of the type of *Clostridium welchii* are indicated as the causal organisms. In the intestinal tract acid readily inhibits their growth. Anaerobes and acidifiers appear to exist in the normal intestine in a fluxional condition of equilibrium with the acid producers dominant. Disturbance of this situation is followed by growth of the anaerobes with certain pathologic consequences. The presence of large numbers of anaerobes of the type of *Clostridium welchii* and *Clostridium sporogenes* in raw market milk is closely associated with the epidemics reported, which indicates a causal relationship between such organisms and the disease. Pasteurization of milk rich in anaerobic flora may accomplish another thing than the safeguarding of health for which it is intended. Milk contaminated with numerous spores of *Clostridium welchii* should not be pasteurized and distributed for consumption unless one can be certain that sufficient acid is produced in the intestine to restrain the development of the anaerobes.

### New York State Journal of Medicine, New York

33 1 64 (Jan 1) 1933

- Prognosis of Diabetes in Childhood. Priscilla White Boston—p 1  
Painful Shoulder Its Diagnosis and Treatment. C Wallace New York—p 7  
\*Eosinophilia in Bacterial Reaction Sites Preliminary Report M D Touart and W S Thomas New York and H K Russell Valhalla—p 11  
\*Studies in Serum Treatment of Pneumonia J G M Bullowa New York—p 13  
Treatment of Pneumonia by Physiologic Support E E Cornwall Brooklyn—p 18  
Why a Child Refuses to Eat. D P Arnold Buffalo—p 20  
Minority Reports of Committee on the Costs of Medical Care. N B Van Eiten New York—p 22

**Eosinophilia in Bacterial Reaction Sites**—Touart and his associates present the data and results of an investigation into the incidence of local eosinophilia at the sites of early and late skin reactions following the intradermal injection of bacterial substances in twenty-two subjects. They observed that at such reaction sites an increase in the percentage of eosinophil cells in the fluid contents over that found in normal skin was present in most of the patients examined. They conclude that should the observations of their small series of cases be corroborated by future investigations eosinophilia will be recognized as being a regular feature of positive early and late reactions to intradermal injections of bacterial products. So far as eosinophilia indicates the presence of hypersensitiveness, it would appear that the early wheal and the late local reaction are but two manifestations of the same underlying condition namely bacterial hypersensitiveness.

**Serum Treatment of Pneumonia**—Bullowa reports the conclusions based on experiences in the typing of 1,601 cases of pneumonia observed at Harlem Hospital during the last four seasons. He presents four cases, one illustrating the advantage of giving serum without waiting for the type and showing that even massive invasion of the blood stream may be overcome with an adequate dose of serum one in which inadequate amounts of serum were unavailing one illustrating the difficulty in determining the type and the occasional advantage of lung suction for this purpose and one in which type I invaded blood and pleura with a concomitant infection with type VIb in which recovery occurred after the administration of type I serum and after an empyema due to pneumococcus type I was operated on. The author recommends the early and liberal administration of serum type I and type II in all cases as they are the most frequent invaders. The best treatment of pneumonia requires specific serums of high titer and accurate bacteriologic study. The physician must have this assistance in the treatment of pneumonia if he is not to be handicapped and lose patients he might otherwise save.

### Philippine Islands Med. Association Journal, Manila

13 1 64 (Jan) 1933

- Development of Modern Medicine. T Roosevelt—p 1  
A Message M L Quezon—p 4  
Philippine Islands Medical Association V G Heiser New York—p 5  
The Physician and the Community Welfare E D Aguilar Manila—p 7  
Future of Public Health Work in the Philippine Islands. G C Dunham Carlisle Pa.—p 17  
Diagnostic Value of Different Examinations of Pleural and Peritoneal Fluids in the Philippines A G Sison P Ignacio and A. Adorable Manila—p 22  
Nutritional Requirements of Filipinos Isabelo Concepcion Manila—p 26

### Surgery, Gynecology and Obstetrics, Chicago

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- \*Division of Nerves and Tendons of Hand with Discussion of Surgical Treatment and Its Results S L Koch and M L Mason Chicago—p 1  
Observations on Mechanism and Signs of Separation of Placenta L Drosin New York—p 40  
Postoperative Pulmonary Complications I Statistical Study Based on Two Years Personal Observation D S King Boston—p 43  
\*Two Rapid Tests for Pregnancy J E Markee Stanford University Calif—p 51  
\*Comparative Bactericidal Action of Mercurochrome and Iodine Solutions Used as Local Tissue Disinfectants J S Summons Washington D C—p 55  
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Intracanal and Perirenal Lipomas J deJ Pemberton and J M McCaughan Rochester Minn—p 110  
Administration of Proctoclysters G L Perusse Jr Chicago—p 116

**Division of Nerves and Tendons of Hand**—Koch and Mason are of the opinion that in the surgical treatment of tendon and nerve injuries several technical details are of great importance. First of these is care to insure asepsis. In their judgment nothing in the way of surgical skill accurate apposition of tendons and nerves postoperative care or postoperative physical therapy can compensate for failure to secure healing by primary union. To render such healing as nearly certain as possible the hand and forearm are carefully prepared by thorough and prolonged cleansing with soap and water the afternoon before operation. A sterile dressing is then applied and left in place until the patient reaches the operating room. Just before operation the hand and forearm are painted with a 5 per cent solution of trimetaphenol in 50 per cent alcohol. An area on the abdominal wall from which subcutaneous fat can be obtained is prepared in the same way and if there is a likelihood that tendon grafts will be needed a foot also is prepared. In the operating room sterile linen is applied in such a way that hand abdomen and foot are accessible without shifting the sterile linen once it is in place. Just before the operative incision is made the extremity is elevated for a few moments and the blood pressure cuff applied beforehand inflated to 220 or 230 mm. A bloodless field is indispensable for careful and accurate dissection and suture. Gentleness in the handling of tissue is of paramount importance. This gentleness must be directed not only to the handling of nerves and tendons but to the superficial tissues as well. The authors have used special instruments for holding tendons but have finally come to depend on simple instruments fine tissue forceps with teeth so-called Adson forceps very fine, straight arterial needles for tendon and nerve suture number D Corticelli white silk for the retention suture in the tendon and number A Corticelli black silk for the coaptation suture in the tendon and for nerve suture fine round needles with fine silk for suturing the deep fascia and subcutaneous tissue and fine cutting needles with fine dermal suture or silk for the closure of the skin. In no case in which the preoperative examination left the authors in doubt as to whether recovery was taking place and in which at operation nerve

ends were found united by a fairly normal appearing spindle of scar tissue were they able to secure a response from electrical stimulation of the nerve in question and, therefore, to determine that resection of the neuroma and suture would not be necessary. In the majority of such doubtful cases, resection of the scar tissue showed smooth connective tissue uniting the nerve ends and forming a complete block to the downgrowth of axons. Occasionally the excised section showed on its cut surface a few apparently intact nerve fibers, but in these cases also stimulation of the nerve above the site of injury had failed to produce contraction of the muscles supplied by the nerve in question.

**Two Rapid Tests for Pregnancy**—Markee tested specimens of urine from 147 pregnant and twenty-six nonpregnant women by the direct and indirect tests for pregnancy based on the modification of the vascular rhythm in endometrial transplants by the presence of relatively large amounts of follicular hormone in the blood stream of the test animals. The direct test is made by injecting the follicular hormone, which has been extracted from 150 cc. of urine, into gonadectomized or nongonadectomized male or female rabbits. Only nonovariectomized female rabbits can be used in the indirect test. Since the intravenous injection of urine from pregnant women induces pseudopregnancy, the animals should not be used oftener than every third week. The diagnosis cannot be made until from seven to eight and a half hours after the injection of the urine. The main advantage of the direct over the indirect test is that the diagnosis can be made forty minutes after the injection or two hours after the specimen of urine has been obtained. Only a limited number of animals are required, since the same rabbit may be safely used every third day. A correct diagnosis of pregnancy by both the direct and the indirect methods was made as early as the forty-seventh day after the beginning of the last menstrual flow. The greatest difficulty encountered in the use of these tests for pregnancy is that the vascular changes observed in endometrial transplants in the anterior chamber of the eye are of two kinds, the rhythmic changes and those that follow fright. The former are arrested in vasodilatation by follicular hormone but the latter are not. The diagnoses of both tests agreed with the patients' clinical histories.

**Mercurochrome and Iodine as Disinfectants**—Simmons treated skin abrasions, superficial incisions and deep incisions, contaminated with undiluted broth cultures of either *Staphylococcus aureus* or *Streptococcus pyogenes* for various periods of time with solutions of iodine and mercurochrome respectively. Application of tincture of iodine to 151 wounds contaminated with staphylococci resulted in sterile cultures as follows: abrasions, 83.4 per cent, superficial incisions 83.1 per cent, and deep incisions, 31.2 per cent, while its use on 59 wounds contaminated with streptococci resulted in sterilization as follows: abrasions, 75 per cent, superficial incisions 80.9 per cent, and deep incisions 82 per cent. Of the 210 contaminated wounds treated with tincture of iodine, the cultures from 156 or 74.2 per cent were sterile. Mercurochrome used under similar conditions caused relatively little reduction in the numbers of viable test organisms and failed to sterilize any of the 210 wounds. Mercurochrome is comparatively so ineffective in the sterilization of contaminated living tissues that it should not be considered as a substitute for iodine.

**Excretion Urography and Sodium Ortho-Iodohippurate**—Sodium ortho-iodohippurate, a halogen derivative of a substance normally found in the human urine is proposed by Swick for excretion urography. He has obtained satisfactory urograms in adults with doses varying between 10 and 15 Gm of ortho-iodohippurate dissolved in distilled water in 40 per cent concentration. The injection is carried out over a period of five minutes. The first film is taken ten minutes after the injection, two subsequent exposures being made at twenty minute intervals. Whenever functional disturbances are present, additional films should be taken to determine definitely the absence of visualization or the presence of late visualization. Aside from a slight sensation of generalized warmth there have been no reactions. He has not observed thrombosis at the site of injection. To date he has used the substance in 125 cases having administered 20 and 30 Gm of the substance in some cases. Occasionally transient vomiting occurred with the larger

dose. Children under 13 years of age have received 10 Gm doses without ill effects. A 1 year old child, in whom suitable roentgenograms were observed showed no reactions from a 10 Gm dose. In a 3 year old child receiving 6 Gm. of the substance, satisfactory roentgenograms were obtained. Oral administration in man has given encouraging results. Of fourteen cases, 50 per cent yielded satisfactory urograms. The dose administered by mouth has been between 10 and 15 Gm. dissolved in simple syrup. No reactions have been noted. Diagnostic pictures have been obtained 90 and 135 minutes after administration. Further investigations with the oral administration are in progress in the hope of improving the results.

**Roentgen Measurements in Pregnancy**—Moore describes the recognized methods in vogue today. These are methods based on mathematical calculations alone, methods based on mathematical calculations associated with triangulation and stereoroentgenographic procedures, and scale methods. The two latter types are the ones most commonly used today. The author's method is as follows. A point on the spine at the upper border of the fifth lumbar vertebra is located and a small piece of adhesive plaster is placed over this region. A line drawn from that point through the superior border of the symphysis pubis passes through the plane of the inlet of the pelvis. The patient is placed in a semirecumbent position with the pelvis centered over the cross lines on the surface of the Bucky diaphragm. By the use of calipers the distance from the adhesive tab to the Bucky is determined. The distance from the superior surface of the symphysis to the Bucky is measured with a ruler. The patient is adjusted so that these two measurements correspond. This places the plane of the inlet in a position parallel to the film. The tube is now centered to correspond with the cross lines of the Bucky at a focal film distance of 30 inches. An exposure is made of the pelvis. The patient is then removed from the table and the lead scale placed in the same plane as the pelvic inlet. This is accomplished by using the measurements previously mentioned and with the Bucky running a short exposure is made which superimposes the scale on the film. If one wishes to vary the technic by not having the plane of the pelvis parallel to the film, the procedure then varies and stereoscopic roentgenograms are taken of the pelvis instead of a flat film. The scale in the latter instance is superimposed on one of the stereoscopic films. The reason for adopting this method is that the stereoscopic roentgenograms give one a better visualization of the pelvic inlet, make the parts desired to be measured more distinct and give one a better localization of these points. The pelvimeter consists of a lead sheet approximately 16 by 19 inches in size. This sheet of lead is one sixteenth inch thick and held firmly to a board of the same dimensions by screws placed around the border of the lead plate. The board is approximately half an inch thick and made of basswood. Stiles are placed across each end of the board to prevent warping. Legs are mounted on the board and by the use of thumb screws the pelvimeter can be lowered or raised. The author recommends the following routine: 1. Roentgen pelvimetry on all primiparas as soon as pregnancy is diagnosed. 2. Roentgen pelvimetry on all multiparas with history of difficult labors. 3. Routine care and diet by an obstetrician in all cases when small pelvic inlets or a distorted pelvis is found. 4. Roentgenograms of all obstetric cases just prior to term. 5. Cephalometry, if the latter procedure shows any evidence of disproportion.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

41:164 (Jan.) 1933

- Prophylaxis in Diseases of Thyroid Gland. Presidential Address. M. O. Shivers. Colorado Springs, Colo.—p. 1.  
Skin Temperature Studies III. Thrombosis of Arteries of Extremities. Brain, Heart and Kidney with General Discussion of Vascular Disease. Case Report. W. K. Livingston. Portland, Ore.—p. 21.  
Regional Spinal Analgesia. G. R. Vehrs. Salem, Ore.—p. 26.  
Seattle's First Physician. Dr. David Swinson Maynard. J. T. Mason. Seattle.—p. 34.

**Regional Spinal Analgesia**—Vehrs points out that the fundamental principles of regional subarachnoid analgesia are that puncture of the arachnoid may be performed at any desired level, and that the dose of the drug (in this case procaine hydrochloride) necessary to produce sensory block must be

known Since the effective difference between sensory and motor block is from 15 to 25 mg of French procaine hydrochloride, it is easy to determine the proper dosage. With the use of 15 cc of spinal fluid as a diluent, 50 mg of procaine hydrochloride is insufficient to produce an analgesia for sufficient time to perform anything but short time operative and diagnostic procedures, 60 mg is sufficient for dorsal injections and 70 mg will produce complete sensory block with a little superadded motor nerve block. Fear of piercing the cord is unwarranted, and should it occur, it does no harm if small needles and surgical asepsis are used. No injections should be made over the phrenic nerves, because the first dorsal injection site is safer and gives the same analgesic results. Injection of a sensory dose of procaine hydrochloride into the cisterna magna is safer than injections of the same dose in the cervical region, because of the large lake present for the rapid dilution of the drug. The sensory dose for the cistern is much greater than that at any other segment. There are practically no contraindications to this method. No deaths have occurred with this simple technic. This type of analgesia has a great field of usefulness in the cases that require no motor block, and in the patients who have greatly weakened heart muscles and pulmonary or other complications.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

#### British Journal of Physical Medicine, London

7: 173 192 (Jan.) 1933

- Technic of *Weassely* Radiation Apparatus in Treatment of Laryngeal Tuberculosis. J. W. Miller —p. 175  
Relationship of Light-Climate Research to Public Health. W. Hausmann. —p. 177  
Radium in Medical Diseases. F. H. Humphris —p. 179

#### British Journal of Surgery, Bristol

20: 361 544 (Jan.) 1933

- Relationship of Structure of Enlarged Prostate to End Results of Prostatectomy. E. W. Riches and E. G. Muir —p. 366  
\*Rubber Esophagus. A. Evans —p. 388  
Occlusion of Main Artery and Main Vein of Limb. W. C. Wilson —p. 393  
Innervation of Blood Vessels of Upper Extremity. Some Anatomic Considerations. D. Sheehan —p. 412  
Report on Strangeways Collection of Rheumatoid Joints in Museum of the Royal College of Surgeons. R. L. Knaggs with photomicrographs by G. H. Rodman —p. 425  
Preoperative and Postoperative Treatment of Gallbladder Disease. A. F. Hurst. —p. 444  
Reconstructive Esophagoplasty. Notes of Successful Case. H. H. Sampson —p. 447  
Bipartite Carpal Navicular Bone. G. I. Boyd —p. 455  
Eight Letters of Joseph (Lord) Lister to William Sharpey. C. R. Rudolf —p. 459  
\*Extensive Loss of Tibial Diaphysis. Tibiofibular Grafting. G. R. Girdlestone and W. B. Foley —p. 467  
Parathyroid Tumor Associated with Generalized Osteitis Fibrosa Case. H. Cohen and R. E. Kelly —p. 472  
\*Diagnosis and Treatment of Generalized Osteitis Fibrosa with Hyperparathyroidism. R. C. Elmslie, F. R. Fraser, T. P. Dunhill, R. M. Vick, C. F. Harris and J. A. Dauphinee —p. 479  
Chronic Parotitis. Report of Four Cases with Sialograms. L. N. Pryor —p. 508  
\*Technic of Resection of Presacral Nerve (Cotte's Operation). A. A. Davis —p. 516

**Rubber Esophagus**—Twenty-three years ago, for an extensive carcinoma, Evans removed the larynx, part of the pharynx, the cervical esophagus and as much of the thoracic esophagus as his fingers could reach behind the sternum. This necessitated a permanent tracheotomy and a permanent gastrostomy. The patient is alive and well today. She takes her food by mouth masticates and swallows it and no onlooker would guess there was anything unusual in the process—but an extra-thoracic rubber esophagus has replaced the normal one. The original empyema tube has been replaced by a curved rubber tube fitted with a flange. The number 9 Jacques catheter originally introduced into the stomach at the time of the gastrostomy has been at various times replaced by rubber tubes of increasing size and eventually has attained its present size, number 15. This too is fitted with a flange, 5 inches from its lower end, and to this tapes are attached the tapes are tied round the abdomen to keep the gastric tube in position.

**Extensive Loss of Tibial Diaphysis**—Girdlestone and Foley present the case of a boy in whom they performed an operation for bridging a big gap in the tibia after a partial diaphysectomy for osteomyelitis. They used the following technic. Through a long external incision practically the whole length of the shaft of the fibula was exposed and the periosteum incised and reflected. Tracks were then prepared through the soft parts deep to the anterior tibial muscles, vessels and nerves, beginning from each end of the exposed fibular shaft and continued as tunnels drilled with a narrow gouge into the healthiest and strongest part of the tibial metaphysis, the upper one obliquely upward into the upper metaphysis, and the lower one obliquely downward into the lower metaphysis. The right tibia was then exposed and four grafts were cut as follows: (1) an osteoperiosteal graft about  $\frac{3}{4}$  inch broad and sufficiently long to cover the whole length of the exposed fibula; (2) a graft about  $\frac{3}{4}$  inch broad consisting of cortical and medullary bone, of the same length and (3) two similar but shorter and rather stouter grafts. The two short grafts after being pointed slightly at one extremity were pegged firmly into the tunnels previously drilled in the upper and lower tibial metaphyses. The free ends of these grafts after traversing the oblique tracks in the soft parts ended in contact with the bared shaft of the fibula under the reflected periosteum. The ends were crushed and turned so as to lie in close apposition to the fibular shaft. The long bone graft was then laid along in contact with the shaft of the fibula under the fibular periosteum, and the osteoperiosteal graft was laid over it with its bony surface in contact with the fibular shaft and the three grafts. Both wounds were sutured, and the grafted leg was put into a plaster cast including the knee and ankle joint. Roentgenograms taken ten months after the operation showed great hypertrophy of the fibular shaft, which is beginning to resemble in thickness the tibia of a child of the patient's age.

**Osteitis Fibrosa with Hyperparathyroidism**—Elmslie and his associates report three cases of generalized osteitis fibrosa with hyperparathyroidism, with an account of the bony lesions as determined by exploratory operations and roentgen examinations, and the results of a chemical investigation of the calcium and phosphorus metabolism. In each of the three cases a tumor of the parathyroids was removed by operation. Tetany resulted from the operation in two of the cases. The diagnosis of generalized osteitis fibrosa depends on the demonstration of generalized rarefaction of the bones in addition to the presence of cystlike areas of rarefaction, cellular tumors of the bones, spontaneous fractures, muscular weakness and wasting, and aches and pains in the limbs. Renal calculi were present in two of the three cases on roentgen examination. An abnormally high level of serum calcium was not always found, even when a parathyroid tumor was present. In the authors' three cases an increased excretion of calcium in the urine was constantly demonstrated. In cases of generalized osteitis fibrosa the presence of hyperparathyroidism should be demonstrated before operation on the parathyroids is undertaken. After the removal of the parathyroid tumor, the level of the serum calcium fell strikingly and calcium was retained by the body or, if retention was present previously, this was definitely increased. An abnormal condition of the phosphorus metabolism was found in each of the three cases, but no consistent relation could be demonstrated between the changes in the calcium metabolism and the phosphorus metabolism, either before or after the removal of the parathyroid tumors. As a result of the removal of the parathyroid tumor striking improvement in general health and strength and cessation of pain resulted in each of the three cases, and no further fractures occurred. A considerable increase in the density of the bones, especially around the cysts and in the cortical bone, was seen from ten to twenty-four months after the operation. In one case the appearance of the skull showed a striking return toward the normal twenty months after the operation.

**Resection of Presacral Nerve**—Davis describes an operative technic for the resection of the presacral nerve, which is easy and safe to perform, except in the presence of occasional abnormalities, which he gives as he has observed them in twenty consecutive cases. The technic is as follows. When the peritoneum is opened, the abdominal and pelvic organs are rapidly examined and any abnormality is dealt with. This done, the Trendelenburg position is adopted, and the site of

operation is exposed by careful packing off of the intestine on all sides. The three points of Cotte should next be definitely identified by palpation: the promontory of the sacrum, the bifurcation of the aorta and the inferior mesenteric artery. The posterior parietal peritoneum over the nerves is gently lifted and snipped with scissors, and the incision is extended upward and downward for an inch or more, exposing the operative field. No attempt should be made to dissect out and excise the individual nerves. Instead, the layer of fibrocellular tissue, in which the nerves run and which lies between the posterior parietal peritoneum anteriorly and the left common iliac vein and the fifth lumbar vertebra posteriorly, should be systematically removed in one sheet, from the left common iliac vein to the right common iliac artery laterally, and from the aortic bifurcation above to the sacral promontory below. A little more than 1 inch of the nerve or nerve plexus is thus excised. It is unnecessary to transgress these limits. The fascia containing the presacral nerves is of a peculiar density and toughness and any doubt of its identity is easily dispelled by exerting firm traction on its proximal cut end. Hemorrhage is usually negligible, coming solely from the tiny vasa nervorum, and is controlled by tampon pressure. The occasionally brisk arterial bleeding from an abnormal vessel is easily seen and clipped. A continuous peritoneal suture of number 90 linen thread completes the intra-abdominal portion of the operation, and the wound is closed in layers.

### British Medical Journal, London

1: 173-212 (Feb. 4) 1933

- Results of Lumbar Sympathectomy in Thrombo-Angiitis Obliterans. E. D. Telford and J. S. B. Stophord.—p. 173  
Effect of Passage Through Glossina on Resistance of Trypanamide Fast Trypanosome. W. Yorke F. Murgatroyd and F. Hawking.—p. 176  
\*Chronic Pulmonary Tuberculosis. New Conception. R. C. Wingfield.—p. 179  
\*Pernicious Anemia with Return of Hydrochloric Acid and Ferments After Treatment. L. S. P. Davidson.—p. 182  
Forcible Nasal Inspiration. J. Dundas Grant.—p. 183  
Multiple-Puncture Cutaneous Tuberculin Test. W. S. Craig.—p. 184

**Chronic Pulmonary Tuberculosis**—Wingfield's conception of chronic pulmonary tuberculosis is based on the seven postulates founded on the accepted research work published during the last twenty years. 1 That after the first infection of the human body, with its resulting "primary focus" be this situated where it may be the first manifestation, or the early lesion, of the adult type of chronic pulmonary tuberculosis is due to a hematogenous deposit of bacilli obtained by the blood stream from the lymphatic system and accompanied by a local allergic tissue reaction. The author calls this a secondary lesion. 2 That the life of this lesion in its pure state is extremely short—a matter of a few days—and that by the end of that time its fate is determined. It either disappears, leaving a negligible scar, or else undergoes certain definite changes and certain unknown changes, becoming what may be termed an intermediate lesion. 3 That the life of the intermediate lesion is indeterminate, depending on the diathetic condition of its host, his health at the time and his environmental conditions. It either remains as an intermediate lesion, spreading by direct extension in all directions, or healing in one direction and spreading in another, or remaining dormant but unhealed, or else it heals decisively. In its healing it may either form a fibrous or a fibrocalcereous scar with no activity or may contain somewhere in its interstices small areas of an intermediate lesion. 4 That the intermediate lesion, healed as far as it may be in a nonprogressive state, is a tertiary lesion. 5 That pure tertiary lesions do not spread. Apparently pure ones if they do spread do so slowly and then only by virtue of the intermediate elements they contain. 6 That tertiary and intermediate lesions may become secondarily infected. 7 That spread of disease takes place in three ways: (a) By the appearance of a new, hematogenous, secondary lesion, which will behave in exactly the same way as its predecessor or predecessors. These new secondary lesions may occur time and time again. (b) By the spreading of an intermediate lesion by its direct extension of tissue infiltration and destruction. (c) By rapid bronchogenic spread in terminal states after hemoptysis and under anesthesia. The author concludes that, if one cannot prevent the recurrence of secondary lesions, one must admit almost a 50 per cent failure and therefore one's patients should no longer be labeled tuberculous and nontuber-

culous—and the tuberculous as active or inactive, advanced or incipient—and be herded into a sanatorium, hoping for the best when one knows that for the majority the worst will occur. The reactionary continuance of such a policy should hold one up to ridicule, it wastes public money and imposes hardships on one's patients to no useful end.

**Pernicious Anemia and Hydrochloric Acid**—Davidson describes a case of pernicious anemia in which the stomach regained the power of secreting hydrochloric acid and pepsin and, in all probability, the intrinsic factor of Castle. The patient has maintained excellent health and a satisfactory blood level for the past six months on a normal diet. While it is necessary to await developments for another year, it is not unreasonable to assume that this case of pernicious anemia has been cured. The patient was given two tubes daily of a fish liver extract made in Aberdeen. A reticulocyte crisis started on the third day and reached 18 per cent on the fifth day, returning to normal in twelve days. As soon as the reticulocyte crisis was well developed fish liver extract therapy was stopped. Apart from the usual hospital diet the patient received nothing further in the way of specific therapy (mammalian liver or liver extract, gastric tissue products, vitamin B preparations), drug treatment (iron or arsenic) or gastric lavage. The remarkable potency of the remedy employed for this short period is evidenced by the doubling of the blood count in twelve days and the trebling of it in twenty-one. Thirty-three days after admission, the patient left the hospital with a blood count of 4,100,000 red cells and 85 per cent hemoglobin. The liver and spleen had diminished in size, and his general health and appearance were excellent.

### Journal of Physiology, London

77: 207-318 (Feb. 8) 1933

- Components of Retinal Action Potential in Mammals and Their Relation to Discharge in Optic Nerve. R. Granit.—p. 207  
Experiments on Nature of Labile Role of Sulphur in Metabolism. H. E. C. Wilson.—p. 240  
Antagonistic Effect of Alcohol on Pituitrin Hyperglycemia. M. M. Murray.—p. 247  
Observations on Sensation. Sensory Functions of Skin for Touch and Pain. D. Waterston.—p. 251  
Single Shock Excitation and Inhibition of Contralateral Extension in Spinal Cat. K. Matthes and T. C. Ruch.—p. 258  
Respiration of Isolated Gill Tissue of Eel. J. B. Bateman and A. Keys.—p. 271  
The Mucus Factor in Automatic Regulation of Acidity of Gastric Contents. C. Bolton and G. W. Goodhart.—p. 287  
Histamine Histaminase System in Isolated Perfused Kidney Lung Preparation. R. G. MacGregor and S. Peat.—p. 310

### Journal of State Medicine, London

41: 1-62 (Jan.) 1933

- Diagnosis of Occupational Dermatitis. R. M. B. Mackenna.—p. 5  
Role of Hospital Almoners in Maintenance of Health and Avoidance of Disease. W. H. M. Telling.—p. 21  
Chemical Changes in Pasteurized Milk. S. Andrews.—p. 42  
Differentiation of Bacillus Coli and Bacillus Lactis Aerogenes. W. J. Wilson.—p. 45  
The Nurse in Industry. Irene H. Charley.—p. 47

### Japanese Journal of Obstetrics and Gynecology, Kyoto

15: 341-430 (Oct.) 1932

- Experimental Investigation of Effect of Nervous System on Function of Genital Organs. K. Minamiwawa.—p. 342  
Study on Effects of Bleeding on Pregnancy. T. Kosaka.—p. 364  
Experimental Study on Antitoxic Function of Human Placenta. K. Ueda.—p. 389  
\*Crisis of Injection of Pilocarpine as Remedy for Urine Retention After Gynecologic Operation and in Puerperium. Y. Katsu.—p. 398  
Elderly Pluripara. J. Nakagawa.—p. 402  
Instance of Interstitial Tubal Pregnancy Diagnosed and Extirpated Before Rupture. N. Kawashima.—p. 406  
Chorioidal Angioma. N. Kawashima.—p. 412  
Changes in Blood Figure in Normal and Cancerous Albino Rats with Reference to Effect of Diathermy. T. Fuke.—p. 418  
Etiology of General Congenital Edema of Fetus. H. Yagi and H. Fujimori.—p. 425

**Injection of Pilocarpine in Treatment of Urine Retention**—Katsu treated eleven patients with urine retention occurring after systematic panhysterectomy for cancer, thirty-three cases of urine retention after gynecologic laparotomy and twenty-four cases of urine retention in the puerperium, using a subcutaneous injection of from 0.5 to 1 cc. of a 1 per cent solution of pilocarpine chloride. When no results were obtained the same quantity was diluted with about 5 cc. of

physiologic solution of sodium chloride and injected into the median vein, this reduced the height of the bladder to 3 finger-breadths above the symphysis. The author concludes that the treatment can be applied in every type of urine retention. It saves frequent catheterization and prevents infection through the urinary route. When the quantity of natural urination is reduced after systematic panhysterectomy this treatment increases it markedly. It is generally effective in urine retention of other gynecologic laparotomies and during the puerperium, especially when no other treatments for the retention are effective. The by effects are slight and temporary.

### Presse Médicale, Paris

41 473-496 (March 25) 1933

- Drainage of Purulent Pleuritis in Closed Thorax H Constantini—p 473
- \*Curative and Preventive Treatment of Ankylosis and Posttraumatic Arthritis by Acetylcholine R Fischer—p 475
- Normal and Pathologic Innervation of Dental Pulp M A Gordon and M E Jorg—p 479
- Cleaning Lymph Nodes of Neck in Buccopharyngeal Cancers J L Roux Berger and A Tailhefer—p 482
- Gout and Rheumatism M P Weil and G Dêtre—p 484
- Influence of Allergic Condition in Experimental Tuberculosis. E. Leuret and J Caussimon—p 487
- Treatment of Recurrent Luxation of Shoulder A Sicard and J Hepp—p 489
- Intratracheal Injection of Iodized Poppyseed Oil by Transnasal Method G Rossel—p 490
- Roentgenologic Sign of Congenital Coxofemoral Luxation F Gottlieb—p 492

**Ankylosis and Posttraumatic Arthritis**—A comparison of the results of sympathectomy with those of endocrine therapy in severe cases of ankylosis with pain and osteoporosis, following articular trauma or prolonged immobilization of a joint led Fischer to the utilization of acetylcholine. Its chief action is vasodilation of the small peripheral arteries. The success obtained with it in the treatment of varicose ulcers made him think that in certain cases of articular ankylosis it might have a similar action to that of sympathectomy. He first used acetylcholine in old cases of ankylosis in poorly reduced fractures and in cases of painful stiffness following immobilization. The results were so favorable that he tried this treatment as a preventive in recent fractures, by giving injections of acetylcholine during immobilization. From the results of thirteen cases which he reports, he concludes that any articular trauma or any immobilization of a limb which may cause ankylosis of the joint is amenable to treatment with acetylcholine. The treatment should be started during the first days of immobilization and prolonged according to the condition of the joint. If the joint is relatively supple at the end of immobilization, a few injections of acetylcholine will quickly cure the persistent stiffness. If a severe, painful stiffness or ankylosis is feared because of the patient's age, the severity of the lesion or imperfect reduction, or because the ankylosis resists treatment or is of long standing, the injections of acetylcholine should be given daily. The amount needed for a full treatment is from fifteen to twenty ampules of acetylcholine (Roche) in 1:10 dilution; it may be increased during the first days of immobilization if a retardation is feared. The treatments accelerate complete cure. Ankylosis disappears rapidly with this treatment and, in cases of intra-articular fracture or an immobilized joint, the joint retains its mobility when the cast is removed. In contrast with sympathectomy, this treatment does not increase osteoporosis, in some cases it does not affect it and in other cases it decreases it. The author offers the following hypothesis to explain the action of acetylcholine. There is partial vasoconstriction of the secondary arterioles in a traumatized region; acetylcholine relieves the vasoconstriction and has a favorable effect on the calcium metabolism.

### Deutsche medizinische Wochenschrift Leipzig

59 355-396 (March 10) 1933

- Therapeutic Incompatibilities. F Eicholtz—p 355
- \*Pathogenesis of Chronic Pulmonary Tuberculosis by Exacerbation of Old Pulmonary Primary Complexes H H Kalbfleisch—p 357
- Significance of Protein Peptone Solution for Methodical Examination of Stomach Van der Reis—p 359
- Study on Weil's Disease A Bergwall—p 361
- Experimental Investigations on Chemotherapeutic Action of New Coloidal Bismuth Preparation M Hahn and L Wämoscher—p 362
- Clinical Observations on Action of New Bismuth Preparation. W Richter—p 363
- \*Treatment of Erysipelas. W Vogel—p 365

- Spasm of Pelvic Cavity and of Sacral Region and Its Treatment. A. Muller—p 365
- Observations on Spinal Cord in So-Called Haff Disease of Cats H Assmann H Bielenstein, H Habs and B zu Jeddoloh—p 367
- Retardation of Period of Dilatation in Old Primiparas Cause and Treatment E Fauvet—p 368

### Pathogenesis of Chronic Pulmonary Tuberculosis—

According to Kalbfleisch, it is generally accepted that the dissemination of tuberculosis from a primary focus after it has been at rest for a longer period is comparatively rare. A relation between an old primary focus and new tuberculous tissue products in the lung can be established as certain only on the basis of the following factors: spatial relations between the two, absence of other foci, absence of new tuberculous changes in the regional lymph nodes of the lung and absence of tuberculous changes in the organs of the systemic circulation. In all other instances the interrelation between primary complex and chronic pulmonary tuberculosis is only an assumption and in the majority of cases it will be possible to demonstrate that so called exogenous or endogenous reinfections from the early period of the primary lesion were the point of origin for the exacerbation. The author studied cadavers in order to determine whether exacerbations originating in the old primary focus could be definitely established. He describes two cases in which the occurrence of exacerbations of calcified primary foci could be demonstrated. However such an occurrence is extremely rare and is not identical with the pathogenesis of a pulmonary phthisis. On the contrary it was found that the changes of the exacerbated calcified primary focus were limited to its capsule and its immediate surroundings. There may be exceptions but the author is convinced that they are extremely rare. He stresses the fact that exacerbations of calcified primary pulmonary complexes are possible, that they are extremely rare in the pulmonary portion of the complex and somewhat more frequent in the lymph node portion but that in both cases they have only a slight tendency to dissemination and that for this reason, they are only rarely the point of origin of chronic pulmonary phthisis.

**Treatment of Erysipelas**—Vogel states that in addition to the local treatment of grave and average cases of erysipelas, he has employed intramuscular injections of from 20 to 100 cc (generally 25 cc.) of a polyvalent antitoxic and anti-infectious streptococcic serum. He found that this serum therapy had a favorable influence on the general manifestations of the disease, particularly the temperature which decreased rapidly. The local manifestations did not yield so readily or they even spread for a day or two after the serum was administered but the pain, erythema and tenseness of the skin were lessened, and the whole process appeared to take a more benign course.

### Klinische Wochenschrift, Berlin

12 369-408 (March 11) 1933

- Progress in Investigation of Nature and Etiologic Treatment of Toxicoses of Pregnancy J Hofbauer—p 369
- \*Psoriasis as Metabolic Problem O Grütz and M Burger—p 373
- Colloid Osmotic Pressure and Edema Problem W M Bendien and I Snapper—p 379
- Pharmacologic Properties of a New Compound of Group of Unsaturated Amines H Mugge—p 381
- Experimental and Clinical Contributions to Pharmacology of Iodine C Tiedcke—p 383
- Use of Brain Extracts for Complement Fixation Reaction in Cerebrospinal Fluid K H Vohwinkel—p 386
- Castration Experiments on Male Sticklebacks (*Gasterosteus aculeatus*) During Estruation J Becker and R Lehmsieck—p 387
- Influence of Hormones on Fermentative Processes Influence of Insulin on Amylase of Blood and Liver A Ulewski S Epstein and W Omskaja—p 388
- Bromine Content of Blood F L Hahn—p 390
- Determination of Normal Bromine Content of Blood A Bier and W Roman—p 391
- Idem H Fleischhacker and G Scheiderer—p 392

**Psoriasis as Metabolic Problem**—Grütz and Bürger relate studies which indicate that the underlying cause of psoriasis is probably a disturbance of fat metabolism. They consider two possibilities: (1) that the fats, which are a physiologic requirement of the skin are eliminated through the capillary system in excessively large quantities and, on entering the epidermis, produce the psoriatic manifestations; (2) it is possible that nonphysiologic or irregularly composed lipoids are the cause. In both cases the cutaneous manifestations of psoriasis could be considered as an inflammatory reaction to the pathologic supply of lipoids. Moreover, this theory would

bring psoriasis in relation with the xanthomatoses or the lipoidoses, with which it has in common a similarity in the localization of the lesions and also the fact that it is quite often a hereditary condition. The interpretation of psoriasis as a disturbance of fat metabolism is supported by the success of the dietary treatment deficient in fat content. The authors resorted to this diet in eleven cases of psoriasis. All other therapeutic measures were discontinued when the patients were subjected to this diet. In four cases that had been refractory to other treatments the fat free diet resulted in the complete disappearance of all symptoms, in five instances considerable improvements were observed and two patients, who are still being treated, likewise show improvement. The authors present photographic proof of the efficacy of the fat deficient diet in a case of severe psoriasis. Other aspects of psoriasis that can be explained on the basis of disordered fat metabolism are that butchers and farmers, in whom a diet with excessive fat content is likely, are often subject to psoriasis, that relapses of psoriasis are especially frequent during the cold season when fat consumption is usually greater, that psoriasis is primarily a disease of the colder climates and practically unknown in the tropics, and that carefully observing physicians as well as patients have found that psoriasis shows a better healing tendency when foods such as butter and fats are avoided. Reports in the literature show the efficacy of meat free and vegetarian diets in psoriasis.

### Wiener klinische Wochenschrift, Vienna

46 321 352 (March 17) 1933 Partial Index

- \*Vermiform Appendix and Appendicitis B. Sperk—p. 322
- Electrosurgery in Carcinoma F. Mandl—p. 328
- Result of Comparative Clinical and Roentgenologic Investigations in Pneumonia R. Klima and R. Pape—p. 331
- \*Complement Fixation Reaction in Hypersusceptibility Against Arsphenamine Preparations G. Ensbruner and J. Wendlberger—p. 333
- \*Birth in Deflexed Positions of Fetal Head Recognition and Treatment H. Katz—p. 338
- True and False Stenocardia L. Hess—p. 339

**Vermiform Appendix and Appendicitis**—Sperk calls attention to the structure of the vermiform appendix, which differs from that of other portions of the intestine primarily by its abundance in lymphoid tissues. The former belief that the appendix is entirely useless has been largely abandoned in favor of the theory that it is an organ with a lymphatic function. In this respect, studies have been made on various animal species and the author has continued these studies on the development and distribution of the lymphatic tissues in the intestine of certain carnivorous animals. He thinks that the development of lymphoid tissues in the intestine is dependent on the contact with the intestinal contents and on the duration of the retention of these contents. In discussing the etiology of appendicitis he evaluates the role of the bacterial flora and the significance of the diet, particularly as to whether it is mostly vegetarian or has a high protein, especially meat, content. But he also shows that a meat diet cannot be the only pathogenic factor in appendicitis. He concludes from observations on animals that a meat diet requires considerable physical activity because a rapid intestinal passage is necessary to prevent protein putrefaction. He thinks that an oversupply of proteins combined with deficient utilization and a tendency to constipation are the main factors that predispose to appendicitis. In accordance with this he thinks that appendicitis can be prevented by a suitable diet. He does not wish to be taken for an apostle of vegetarianism but he considers a diet with a high meat content inadvisable for persons with sedentary occupations.

**Complement Fixation Reaction**—Ensbruner and Wendlberger decided to try the complement fixation reaction for the detection of hypersusceptibility against arsphenamine (1) because repeated intracutaneous tests may produce sensitization and (2) in order to be able to detect an exciting or developing arsphenamine hypersusceptibility before or in the course of an arsphenamine cure without exposing the patient to the dangers of sensitization involved in cutaneous tests. They give a brief report of the tests they performed on the serums of three patients with arsphenamine hypersusceptibility and on forty-three control persons. In the persons with hypersusceptibility to arsphenamine a deviation of the complement is evident.

**Birth in Deflexed Positions of Fetal Head**—Presentation of the forehead occurs in approximately 15 per cent of deliveries. This position can be recognized during internal examination by the tendency of the large fontanel, which is in the lowest plane, to rotate toward the pubic symphysis, whereas the small fontanel can hardly be reached. The delivery in this position takes the perineum considerably, and for this reason the author recommends prophylactic episiotomy, but he thinks operative delivery unnecessary. In exceptional cases the forceps have to be employed, the typical birth mechanism should be imitated as much as possible, but an expectant attitude is generally best. Katz further discusses presentation of the face, which occurs in from 0.36 to 0.5 per cent of deliveries. He asserts that if an expectant attitude is taken, 90 per cent of the facial presentations terminate favorably for mother and child. The mortality of children born in this position is only slightly higher than that of children born in occipital presentation and consequently it is advisable to avoid the early and unnecessary use of the forceps. If it becomes necessary to terminate the delivery, Kjelland's forceps should be used. The author considers the brow presentation the most difficult of the deflexed positions. In a slightly narrow pelvis in multiparas version may be attempted, but, if the pelvis is extremely narrow, delivery by cesarean section is advisable. However, the latest statistics indicate that in this presentation likewise an expectant attitude is best for mother and child.

### Zeitschrift für experimentelle Medizin, Berlin

87 283 550 (March 6) 1933 Partial Index

- Action of Inflammatory Influences on Movement Growth and Metabolism of Isolated Cells and Tissues Analysis of Cellular Reaction in Inflammation R. Meier—p. 283
- Action of Smallest Quantities of Thorium X and of Benzene on White Blood Picture C. Wallbach—p. 340
- Utilization of Galactose in Physiologic and Pathologic Conditions H. Kosterlitz and H. W. Wedler—p. 397
- Significance of Phenol Indole Metabolism M. Biehl—p. 416
- Course of Oxidative and Glycolytic Processes in Leukocytes of Inflamed Tissue During Phagocytosis A. D. Ado—p. 473
- Studies on Leukocytosis G. Gottsegen and E. Winkler—p. 481
- Influence of Hemostatic Remedies on Thrombocytes G. Rheindorf and Emma Walter—p. 496
- \*Tolerance Tests of Stomach Examination of Gastric Juice by Means of Protein Peptone Solution Heckmann—p. 506
- Experimental Investigations on Synergism of Vitamins H. J. Juszat—p. 529
- Pathogenesis of Acute Pulmonary Edema E. Coelho and J. Rocheta—p. 545

**Examination of Gastric Juice**—Heckmann describes a test that employs a protein-peptone solution and utilizes the tolerance principle in the examination of the stomach. The solution is prepared by mixing 80 cc. of a freshly prepared solution of egg albumin with 130 cc. of distilled water, 4 Gm. of Witte's peptone being added and this solution being stained with two drops of a 2 per cent solution of methylene blue. Thus the solution contains approximately 40 per cent of egg albumin and 2 per cent of Witte's peptone. Before being introduced into the stomach it is heated to body temperature and filtered through gauze. Of the total of 210 cc. of solution, 10 cc. is kept and, together with tenth-normal hydrochloric acid and tenth normal sodium hydroxide, is used for titration of the portions withdrawn from the stomach to determine the acid and alkali binding power. The remaining 200 cc. of the solution is introduced into the stomach by means of a thin catheter, following withdrawal of the contents of the fasting stomach. The first fraction of 10 cc. of the gastric contents is withdrawn five minutes after the introduction of the protein-peptone solution, the next fraction five minutes later, and each following fraction after ten minute intervals until discoloration sets in. Later the entire remaining quantity of the secretion is withdrawn. Titration reveals how much hydrochloric acid has been secreted. The normal curves obtained with the protein-peptone solution do not differ from those obtained when caffeine is used, but the protein-peptone test is of great value in all stages of subacidity. Whereas other methods show similar curves, whether the secretion of hydrochloric acid is almost completely abolished or only slightly impaired, the protein-peptone solution permits the differentiation of the following types: (1) secretion of hydrochloric acid insufficient for neutralization of the protein-peptone solution, (2) secretion of hydrochloric acid adequate for neutralization of the protein-peptone solution but not for establishing the peptone optimum,

(3) secretion of hydrochloric acid sufficient for neutralization of the protein-peptone solution and for optimal reaction of pepsin digestion. In hyperacidity the protein-peptone test generally reveals a higher degree of acidity and it frequently detects hyperacidity where other test methods fail. In chronic stenosing ulcers with accompanying gastritis the hyperacidity usually indicated by the caffeine test does not become evident in the protein-peptone test but an insufficiency of the hydrochloric acid secretion is often detected. The new method is not meant to replace the caffeine test but is intended to supplement it.

### Zeitschrift für klinische Medizin, Berlin

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- \*Functional Mitral Stenoses Caused by Tumors of Left Auricle H Ludwig—p 587
- Aneurysm of Pulmonary Artery A Kappeler—p 603
- \*Influence of Excess Fat Diet on Red Blood Picture Dietary Therapy of Polycythemia H Rothmann J Stern and P Hoene—p 620
- \*Incidence of Increased Arterial Pressure in Young Persons H Weinrich—p 629
- \*Takata-Ara Reaction (Jezler Modification) in Diseases of Liver C Rohrer—p 637
- Pathology and Clinical Aspects of Hemorrhagic Tendency R Jurgens—p 649
- Muscular Hyperplasia of Cardiac Ventricles Position of Heart and Electrocardiogram H Klink—p 687
- \*Action of Baths on Circulation H Winterstein and Lily Fraenkel Tessmann—p 700
- Arsenic Hydride Poisoning with Especial Consideration of Changes in Blood F Fretwurst S Horwitz and R Rosenbaum—p 703
- Ammonia Content of Blood Following Muscular Exertion H Kalk and A. Bonus—p 731
- Relation of Cheyne-Stokes Respiration to Cardiac Insufficiency E Ronald and S Wassermann—p 742
- Disturbance of Cholesterol Elimination Aspects of Hypercholesterolemia R Schonheimer—p 749
- Hyperketonemia in Hyperventilation and Other Alkalotic Conditions K Paschalis and G Buttu—p 764
- Investigations on First Phase of Blood Coagulation K. Paschalis and A. Schwoner—p 784
- Do Extracts of Intestinal Mucous Membrane Influence Blood Sugar Content? J Monguió—p 793
- Traumatic Genesis of Internal Diseases M Schur—p 800
- \*Thyrotropic Arrhythmias of Heart and Their Treatment G W. Parade—p 810

**Functional Mitral Stenoses Caused by Tumors of Left Auricle**—Ludwig points out that most physicians consider diastolic murmurs always indicative of an organic cardiac lesion that is they identify it with a change in the valvular apparatus. This is largely justifiable since exceptions are comparatively rare, and it surprised him when the postmortem examination of a patient who for six months had had a systolic and a diastolic murmur at the apex of the heart revealed normal mitral valves and a small myxomatous tumor of the left auricle. This tumor had produced a functional mitral stenosis. The author reviews twenty cases from the literature, in which mitral stenosis resulted from tumor of the left auricle. He calls attention to the frequency of the concurrence of myocarditis with pseudomyxomas of the left auricle and he thinks that a local involvement of the endocardium of the left auricle in the myocarditic process may lead to thrombosis. It is possible that the conditions of mechanical pressure in the left auricle are responsible for the organization and the myxomatous transformation of the thrombus. In discussing the symptomatology of the tumors of the left auricle he points out that there is not a single reliable symptom for these tumors. The symptoms that have been described are caused partly by the accompanying myocarditis (weakness of the cardiac muscle subfebrile temperatures deficient response to digitals) partly by the thrombosis in the heart (embolic infarcts) and partly by the impairment of the mitral valve produced by the tumor.

**Influence of High Fat Content of Diet on Blood in Polycythemia**—Rothmann and his associates found that, when from 100 to 200 Gm of fat was added to the diet for several days the number of erythrocytes showed a considerable decrease. They decided to utilize this action of an excess fat diet in the treatment of polycythemia. They mention one case in which it was possible to decrease the number of erythrocytes from eight million to less than five million and the hemoglobin content from 155 per cent to 122 per cent. This case reacted most favorably yet there were several other cases in which a decrease of the erythrocytes could be effected by alternating between a fat deficient diet and a diet with high fat content

but to reduce the hemoglobin it was usually necessary to resort to venesection. The authors cite reports from the literature that indicate the hemolytic action of fatty acids and cite their own observation on a dog in which the injection of 5 and 10 per cent neutralized caproic acid resulted in a considerable decrease of the erythrocytes. They pointed out that the erythrocyte reducing action of fat should be given consideration in conditions other than polycythemia. They suggest that in the period of convalescence, in the treatment of tuberculosis and in renal and hepatic diseases the fat intake should be restricted to the minimum requirements. They consider the high fat content of the diet of tuberculous patients unfounded although they realize the significance of fat as a carrier of vitamins.

**Increased Arterial Pressure in Young Persons**—Weinrich investigated whether blood pressure increases are present in young persons. His studies were made at an advisory station for athletes on 2,200 young men aged between 13 and 39 the majority being between 17 and 27. Only those who were entirely healthy were considered for the blood pressure studies. The results of the tests are shown in tabular reports. For the purpose of better classification the author divides the examined men into three groups: those whose blood pressure is less than 100 mm. of mercury; those in whom the pressure is between 100 and 130 mm., and those with a pressure of more than 130 mm. In the greatest majority the pressure was between 100 and 130 mm., and only in the younger boys was this middle group somewhat smaller. Beginning with the age of 17 this middle group comprised approximately 80 per cent of the examined youths. The group of those aged between 28 and 33 was an exception to this, in that the middle group amounted to 93 per cent. The percentage of youths with a pressure of less than 100 mm decreased steadily with advancing age. In the young men between the age of 19 and 27 the incidence of this pressure amounted to about 4 per cent whereas in those aged more than 28 it was extremely rare. A pressure of more than 130 mm was never observed in boys under 14 and only in eight of those aged 15. From here on the incidence of the higher pressures increased to reach about 15 per cent in those aged 19 and to remain approximately at this percentage up to the age of 28 but in the men between 28 and 33 there was a decided drop in this group the incidence of pressures of more than 130 mm being only 6 per cent. The average in the group of higher pressures was 140 mm., but there were also some with 160 mm and even with 175 mm. The author points out that pressures of more than 150 mm are generally considered abnormal particularly in young persons but, because he found these youths to be entirely healthy, he is ready to doubt this. He thinks that the normal variations of blood pressure may reach into higher values than is generally believed. However he admits the possibility of another interpretation. He thinks that these youths with the high pressures may later develop true arterial hypertension and considers the absence of symptoms no proof against this since it is known that arterial hypertension may exist for a number of years without causing trouble. He considers it advisable to examine these youths with high pressures from time to time and to watch whether in later years they develop symptoms of hypertension.

**Takata-Ara Reaction (Jezler Modification) in Diseases of Liver**—Rohrer points out that the exact diagnosis of the disturbances in which enlargement of the liver ascites and icterus exist is still difficult. However he considers Jezler's modification of the Takata-Ara reaction which was described in the *Schweizerische medizinische Wochenschrift* 60 52 (Jan 18) 1930 and abstracted in *THE JOURNAL* March 29, 1930, page 1024 a valuable aid. He employed it in tests on 125 serums from 108 patients. The results of the tests, the positive outcome of which is based on a shifting of the ratio of albumins to globulins in favor of the coarsely dispersed phase are compared with the sedimentation speed of the erythrocytes. The author made the following observations. Of eighteen patients with a positive seroreaction, fifteen had cirrhosis of the liver one had chronic ethylism without clinically demonstrable disorders of the liver one had carcinoma of the descending biliary passages but simultaneously existing cirrhotic processes of the liver could not be excluded and one had diabetes mellitus with fatty degeneration of the liver.

without cirrhotic changes of the liver. Among eighteen patients with a weak positive seroreaction there were seven with cirrhotic changes of the liver, two with chronic ethylism and without signs of a hepatic disturbance and nine with hepatic disorders but without signs of a cirrhotic process. Of the seventy-two seronegative cases twenty-three presented cirrhotic processes of the liver and ten presented chronic ethylism. In patients with ascites a positive reaction was observed only when a cirrhotic process existed in the liver. The reaction was positive in other puncture fluids (1) when the patient also had cirrhosis of the liver (puncture of the knee joint) and (2) in two pleural punctures in patients with exudative pleurisy of tuberculous etiology but without any signs of hepatic disorder. The author concludes that as an indicator of a disturbed albumin-globulin ratio the Takata-Ara reaction is superior to the erythrocyte sedimentation speed. He also thinks that in the serum and in the ascites fluid it is a great help in the differentiation of cirrhotic from other hepatic processes. Flocculation in four or five different concentrations usually favors cirrhosis of the liver but a negative reaction does not exclude cirrhosis. In the evaluation of a positive reaction in exudative pleurisy of tuberculous etiology, precaution is necessary.

**Action of Baths on Circulation.**—Winterstein and Fraenkel-Tessmann call attention to studies conducted by Bornstein and his associates in which the influence of baths on the minute volume of the heart of healthy persons was determined. Bornstein employed the method described by Grollman but, instead of using acetylene employed nitrous oxide and made the surprising discovery that warm baths of from 32 to 33 C (89.6 to 91.4 F) and still more those of from 38 to 39 C (100.4 to 102.2 F) increased the minute volume to twice or three times the original value, whereas cold baths effected a slight decrease in the minute volume. The beat volume changed in the same manner although not quite as severely, whereas the amplitude of the blood pressure was not noticeably changed. Bornstein tried to explain this contradiction by the hydrostatic conditions of the bath. Since Grollman's acetylene method appears to be the best for the determination of the minute volume, the authors decided to repeat the experiments of Bornstein and make the tests with acetylene instead of nitrous oxide. They found that in healthy persons warm baths either cause no change or cause a slight decrease in the minute volume of the heart.

**Thyrototoxic Arrhythmias.**—Parade shows that in addition to the well known tachycardia originating in the sino-auricular node, patients with exophthalmic goiter frequently show disturbances of the cardiac rhythm which are a result of the pathologically increased action of the thyroid gland. The author's report is based on observations made on 188 patients with exophthalmic goiter. He observed two types of disturbances in the cardiac rhythm: extrasystole and auricular fibrillation with absolute arrhythmia of the ventricles. The extrasystoles which may be either ventricular or auricular, are comparatively rare. The author observed five cases of ventricular and three of auricular extrasystole. The most frequent disturbance in the cardiac rhythm of patients with exophthalmic goiter, namely, auricular fibrillation with absolute arrhythmia, may be temporary or may become permanent. The author noted that the temporary fibrillation generally concurred with an exacerbation of the other symptoms of exophthalmic goiter; the excitation was more pronounced the exophthalmos became exacerbated and the sweating was more profuse. This seems to indicate that the paroxysmal fibrillation is due to an acute increase in the toxic products of the thyroid. On the other hand, it is possible that the excitability of the sympathetic nervous system suddenly increases (as the result of joy, fright or overexertion) rendering the toxic action of the thyroidal secretion more effective. It is probable that the two factors run parallel. If the exophthalmic goiter does not improve, the accesses of auricular fibrillation may become a permanent condition with absolute arrhythmia of the ventricles. The author found that older patients with exophthalmic goiter are especially subject to absolute arrhythmia. The most important factor in the treatment of thyrototoxic arrhythmias is to prevent intoxication of the organism by the secretion of the thyroid. After this has been accomplished the cardiac disturbances disappear or remedies such as quinine

can exert their action, which is impossible as long as the thyroidal intoxication persists. He advises resorting to iodine treatment only in the hospital where constant control is possible and as a rule, only when resection of the thyroid can be done as soon as the height of iodine action has been reached. The disturbances of the rhythm developing after the operation are, as a rule, readily counteracted by quinine. The author states that roentgenotherapy can be tried in most cases of exophthalmic goiter, but if after three months there is no improvement, surgical treatment should be instituted. Early operation usually gives the best prospects for a complete cure.

## Zentralblatt für Chirurgie, Leipzig

60 609 672 (March 18) 1933

Double Kidneys. K. Volkmann—p 610

Abscess of Abdominal Wall as First Symptom of Bowel Carcinoma.

A. Lerch.—p 616

Inflammatory Swellings Resembling Malignant Tumors. P. Esau—p 620

Question of Reduction of Compression Fracture of Vertebra. M. Kaspar—p 623

Technic of Reduction of Fractured Vertebra in Attitude of Vertical Lordosis After Watson Jones. H. Kottnetz.—p 625

\*Results with Combined Method of Rib Resection and Closed Drainage in Empyema of Children. F. Klages—p 627

Treatment of Shock by Intravenous Injection of Hypertonic Solutions. F. Schuck.—p 634

**Empyema of Children.**—Klages reports on ninety eight patients treated since 1926 in the surgical clinic of Voelcker. Of these, thirty were nursing infants and very young children. The mortality rate was 7 per cent. The author is impressed with the advantages of a combined method of rib resection and closed drainage. The patients were treated by aspiration until the pus became too thick to flow and were then operated on. The method consisted of a typical rib resection, always under local anesthesia, the making of a small incision into the pleura and the introduction of a long rubber tube. A finger cot was tied to the end of the tube and, after from twelve to fourteen days, open drainage was resorted to by cutting off the end of the tube. In order to avoid residual cavities, the average duration of drainage did not exceed twenty-nine days. They did not irrigate. Deformities of the spine were prevented by proper orthopedic exercises. The average duration of treatment with the method described was forty-six days.

60 721 784 (March 31) 1933

Sacralization of Fifth Lumbar Vertebra. P. Graf—p 721

Sacralization of Fifth Lumbar Vertebra as Cause of Backache. A. Beck.—p 728

Congenital Lymphangioma of Breast. R. Bonn.—p 731

\*Operative Treatment of Gastropstosis. B. O. Pribram—p 734

New Hans Lamberger Light Metal Splint for Upper Arm. W. König—p 743

Treatment of Compensatory Veins and of Phlebotic Ulcer. E. Haim—p 745

Plastic Operations on Face and Breasts. H. F. O. Haberland—p 746

**Operative Treatment of Gastropstosis.**—According to Pribram operations for ptosis and especially for gastropstosis have fallen undeservedly into bad repute. Perhaps it is not sufficiently appreciated that our organs are suspended by an arrangement so complicated and so skilful as to rob them of their weight. One of the basic causes of ptosis is to be seen in the disturbance of the coordination in this suspension mechanism, resulting in displacement of organs by the force of gravity. The patient becomes conscious of the weight of the organ so that every change in posture brings about painful sensations, which may range from a sense of mild pressure to severe pain. This pathologic awareness of the weight of an organ constitutes the essence of ptosis as a clinical entity. Emaciation characteristically accompanies gastropstosis. Discomfort and nausea after eating lead to limitation of food intake and further favor loss of fat and progression of the general enteroptosis. The author believes that patients with a clear-cut case of gastropstosis can be benefited by the operation of gastroplication. He considers gastro-enterostomy worse than valueless in this condition, and the various forms of stomach resection too formidable. In his method three or four rows of plicating silk sutures are introduced into the anterior wall of the vertical portion of the stomach. The horizontal portion consisting of the antrum and the pylorus and concerned with the emptying act is not disturbed. The sutures are brought out and are tied in the intercostal spaces. Of the twenty four patients

operated on by the author, thirteen were followed up for from three to eleven years. Eight of these were found to be in excellent condition and symptom free, and five were improved and symptom free.

### Zentralblatt für Gynäkologie, Leipzig

37: 545-608 (March 11) 1933

- Hysterotomograph New Apparatus with Device for Automatic Registration for Clinical Control of Uterine Contractions E. Frey—p 545  
New Apparatus for Recording Uterine Contractions (Tocograph) S. Löwi—p 554  
Lipoids in Human Placenta. K. Klaus—p 558  
\*Calcium Therapy of Acute Inflammations of Adnexa A. von Fekete—p 561  
\*Simultaneous Application of Parathyroid Hormone and of Calcium in Abnormal Uterine Hemorrhages. G. Bakács—p 568  
Treatment of Lochial Stasis. A. Frank—p 573  
Douglas's Abscess in Gravidity. K. Crunfeld and H. Döring—p 575  
Bacillus Pneumoniae Friedländer As Cause of Peritonitis of Genital Origin. H. E. Scheyer—p 578  
\*Ultraviolet Irradiation of Circulating Blood in Septic Diseases V. Frommer—p 583  
Autohemotherapy in Erysipelas. L. Lajos—p 586

**Calcium Therapy of Acute Inflammations of Adnexa**—Von Fekete points out that ten years ago he began to treat acute inflammations of the adnexa with injections of calcium. He mentions the following factors as involved in the action of calcium: the specific action producing a greater impermeability of the vascular endothelium, the pain-allaying action, the reduction of the susceptibility of the cells to inflammatory irritants and the eventual increase in the acid values of the blood. He reviews a number of favorable reports in the literature since his article appeared and relates his experiences with ninety-one patients whom he treated with calcium injections from 1924 to 1931. He resorted to calcium treatment in patients with acute adnexal inflammations of not more than from two to four weeks standing. Older processes were treated with calcium when they showed signs of exacerbation or of spreading of the process, in order to overcome or reduce the symptoms of the acute process: exudation, pain and irregular hemorrhages. The calcium was administered by intravenous and by intramuscular injections. He never observed injurious effects from the injections but found that the pain disappeared within a few days. He considers the rapid checking of the inflammatory exudation the most essential action of calcium. He discusses the surgical treatment of the adnexa and shows the value of the calcium in the preoperative and in the post-operative period.

**Parathyroid Hormone and Calcium in Uterine Hemorrhages**—Bakács resorted to the simultaneous application of parathyroid extract and of a calcium preparation in fifty-three cases of abnormal uterine hemorrhages. In the majority of patients the hemorrhage was of hypermenorrheal nature. The injections were made into the gluteal muscle. Good results were obtained in metrorrhagia haemorrhagica and particularly in hypermenorrhea. In the latter condition the simultaneous use of the two substances gave better results than hormonal therapy alone, but mild hypercalcemic symptoms developed occasionally. The method proved of symptomatic value, and the effects were lasting in many instances. The author thinks that this is the result of functional changes in the parathyroids or in the entire excretory system.

**Ultraviolet Irradiation of Circulating Blood in Septic Diseases**—Since the penetrative power of ultraviolet rays through the layers of the skin is too slight to have an effect on the bacilli circulating in the blood, Frommer exposed a large vein (the vena basilica or the vena jugularis) for a length of from 15 to 18 cm. and removed the adventitia. Following the intravenous injection of 25 cc. of a 1 per cent solution of eosin, ultraviolet radiation was applied to the exposed vein for from six to seventy minutes. The author employed this treatment in six cases of severe sepsis. Three of the patients recovered. The first of these patients, who received two irradiations of six and twelve minutes, respectively, had a generalized sepsis with hemolytic streptococci which developed following an operative intervention for purulent otitis media, the second had a staphylococcal sepsis that developed following manual removal of the placenta, and the third had sepsis resulting from abortion in the third month of pregnancy. The latter two received two irradiations each of thirty and thirty-five minutes, respectively. Of the three patients who died, two

were puerperal women who had pyemia and septicopyemia and purulent, pulmonary metastases, the third woman had endocarditis lenta. Whereas, in the three women who recovered the skin around the wound soon developed an erythema, the three who died showed no erythema in spite of the fact that they were exposed to the rays for longer periods. The author thinks that this sign may eventually prove to be of prognostic significance. He realizes that the limited number of cases observed by him does not permit a final evaluation of the treatment, but he thinks that it has a regenerative effect and increases the resistance, and that, because it is without danger, the method should be tried in cases of sepsis coming for treatment during the early stage.

### Jurnal Po Rannemu Detskomu Vozrastu, Moscow

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Prevention of Measles N. A. Vakar—p 330  
\*Specific Therapy in Epidemic Cerebrospinal Meningitis of Children E. A. Neits—p 348  
Epidemic Meningitis Simultaneous with Measles I. Ya. Shterman—p 355

**Serum in Treatment of Measles**—Dulitskiy points out that popularization of the 'crèche' idea brought about a more urgent need of safeguarding against contagions. The most important of these is measles, owing to the high mortality of the disease in the first year of life. Because of difficulty in obtaining convalescent serum for immunizing purposes, Degkwitz suggested the use of adult blood serum on the assumption that approximately 90 per cent of all adults had had measles. The author suggested in 1924 the use of placental blood obtained a few minutes after the delivery. The dose adopted, 20 cc., was not sufficient to prevent the disease but resulted in a mild course and insignificant mortality. It was of advantage to institutions to have the children pass through a mild course and acquire an active immunity instead of a temporary passive immunity conferred by the use of a sufficient amount of adult blood serum or placental blood serum. Parents bringing a child to the crèche are obliged to give blood for the preparation of the serum. The influence of immunization on the mortality was strikingly demonstrated by a reduction of the mortality in children under 1 year of age from 39.6 per cent to 4.6 per cent and in children from 1 to 3 years of age from 19.8 per cent to 2.8 per cent. No difference was noted in the effect of adult blood serum or placental blood serum. Reactions were observed very infrequently and amount to no more than a rise in temperature. The serum loses its potency after thirty days.

**Epidemic Cerebrospinal Meningitis**—Neits states that the incidence of epidemic cerebrospinal meningitis, a relatively rare disease twenty-five years ago, has been on the increase in the central states of the Soviet. The statistics of the pediatric clinic of the Voronezh Medical Institute show that there were 127 cases in 1927, 583 in 1930 and twice that number in 1931. The disease affects children almost exclusively, and because of high mortality and severe complications, becomes an important factor in the morbidity of childhood. Analysis of the cases did not reveal any special predisposing etiologic factors, except that of age. Experience in this respect coincided with that of the rest of the authors in that the youngest children were far more likely to be stricken. In the statistics, the incidence up to the end of the first year amounted to 49 per cent, from 1 to 2 years to 16.5 per cent, from 2 to 4 years to 19.5 per cent, from 4 to 6 years to 7 per cent and after that the incidence sharply declined to about 0.7 per cent. The greatest number occurred regularly during the early spring and the late autumn months, coinciding with the highest incidence of infections of the upper respiratory tract. To study the effect of specific treatment the author selected a group of 126 patients, who received no treatment of any kind until their admission to the clinic, and in whom the clinical diagnosis was verified by bacteriologic examinations. In a group of twenty patients treated without serum or vaccine, there were eighteen deaths. In thirteen severe cases in which vaccine alone was used, there was a mortality rate

of 50 per cent. In seventeen severe cases in which serum alone was used, the mortality amounted to 70 per cent. In forty-five severe cases in which both serum and vaccine were employed, the mortality rate was 25 per cent. The author concludes that the best results were obtained by combining the serum and autovaccine therapy. In one treatment, 10 cc of antimeningococcus serum was given by the endolumbar route and at the same time an equal amount was administered intramuscularly. An autovaccine, prepared from the fluid obtained at the first spinal puncture, was standardized to contain 5,000,000 killed microbes per cubic centimeter. The initial dose was 0.1 or 0.2 cc and was increased up to 0.5 or 0.6 cc. Injections were made on alternate days. In case of a dry puncture, the author resorted to the suboccipital route but he did not notice any advantage over the spinal method. There has not been one instance of serious shock or death from the injections. Serum reaction was noted in 32 per cent. The serum and autovaccine treatment was effective in materially diminishing the mortality. The average duration of the disease was reduced to three weeks when both vaccine and serum were used and to six weeks when vaccine alone was used. The specific treatment was most effective when applied within the first ten days but had no effect after the fourteenth day. The grave complications of blindness, deafness or chronic hydrocephalus were observed in a single instance when patients were treated with specific therapy.

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 Problem of Gastritis and Its Relation to Ulcer and Cancer of Stomach. M. I. Lifshitz —p. 65  
 \*Use of Specific Serum in Diphtheria. A. I. Yarotskiy —p. 73  
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**Specific Serum in Diphtheria**—Yarotskiy takes a stand against the single large dose of antitoxin in the treatment of diphtheria. He believes that the size of the individual dose as well as the number of injections is to be determined by the patient's condition. He administers 10,000 units to begin with and, in severe cases, repeats the dose the same day. The essential feature of his treatment consists in daily intramuscular injections of antitoxin until all signs and symptoms have disappeared. Injections are kept up until the patient presents the appearance of normal health. Edema of the uvula, hyperemia of the throat excoriations of the epithelium and swollen tonsils demand further injections. Anemic or apathetic appearance suggests persistence of intoxication and calls for further injections. The author considers it fallacious to treat cardiac involvement by stimulants alone. When examination reveals beginning dilatation of the heart chambers, murmurs, muffled sounds, accentuation of the second pulmonic sound, tachycardia or bradycardia, an additional dose of antitoxin will avert collapse and a fatal outcome. The author recommends an additional dose for severe cases from four to five days after the disappearance of all signs and symptoms. The daily dose in laryngeal diphtheria was 10,000 units. The author had 9 fatalities in 377 cases, a mortality rate of 2.4 per cent. In seven of these his method was not adhered to. When these are excluded, the mortality in the group is 0.5 per cent. The author sees in deviation from his method the main cause of mortality in diphtheria.

**Hormonal Sterilization of Female Organism**—Mandelshtamm and Chaykovskiy proved in a previous study that injections of prolactin B in animals cause a temporary sterility. The resulting formation of corpora lutea arrests follicular growth, creating a state of pseudopregnancy. The authors made observations in ten women with normal menstrual cycle about to be operated on for some such condition as uterine fibroma, cancer of the cervix or cyst of one ovary. Freshly prepared prolactin was administered in doses of from 100 to 200

mouse units until, in the course of a few days, the patients received from 400 to 1,100 mouse units. They were operated on from two to twenty-six days after the last injection. Serial histologic sections of ovarian tissue removed at operation demonstrated in each case defective ova in the maturing and matured follicles, disintegration and disappearance of the membrana granulosa, cystic dilatation of the follicles, development of numerous corpora lutea, and hyperemia and hemorrhages into the follicular tissue. The degenerative changes produced render the follicles insusceptible of being fertilized. The authors conclude that (1) various doses of prolactin are well borne by women, (2) administration in the course of a few days of from 400 to 1,100 mouse units of prolactin results in profound degenerative changes in the follicular apparatus, (3) the histologic changes produced suggest that the foregoing doses are sufficient to cause sterility. They question the harmlessness of temporary hormonal sterilization for the general health of the organism as well as for future generations. The absence of degenerative changes in the ovaries of pregnant women is to be explained by the protecting antagonistic action of other hormones present.

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 \*Tuberculous Primary Infection and Tuberculous Disease. H. J. Ustvedt —p. 307

**Aneurysms at Base of Brain**—Harbitz states that aneurysms at the base of the brain are not rare and frequently cause subarachnoidal and intermeningeal hemorrhages, often fatal. In the last twenty years he has seen eighteen such cases, mostly ascribed to arteriosclerosis. Symptoms are often present for days or weeks before sudden rupture and death. Aneurysms at the base of the brain may also be the result of trauma. Congenital anomalies may play a part. Acute alcoholic intoxication is a disposing factor. In younger persons arteriosclerosis can usually be disregarded. From the literature the author cites cases of aneurysms of the brain assumed to be of traumatic origin, but he finds fairly certain cases lacking. In his personal case of a man aged 31 who had been perfectly well until he sustained a considerable trauma of the head in April 1927, symptoms of brain disturbance set in immediately after the accident and continued till January 1932, when death occurred. In his opinion the history of the case and the necropsy results connect the aneurysm with the trauma. The possibility of a slight latent aneurysm at the time of injury cannot be excluded, but in such cases the trauma of the head must have been an essential cause for the development of the aneurysm.

**Gonorrheal Complications**—Thygøtta and Waaler used the complement fixation test in 130 serums, 95 from cases of gonorrhea with and without complications and the remaining 35 from different disorders of the urogenital tract or arthritis. The reaction was positive in 81 per cent of all certain gonorrhea cases, and in 96 per cent if the pure acute anterior gonorrhea cases are included, in which only four of nineteen tests were positive. The dried gonococcus antigen used in the tests showed no increase in spontaneous inhibition of hemolysis or change in fixation power after the lapse of one year. A simple technic with the use of human complement, such as the Noguchi Wassermann technic, excelled the ordinary technic in borderline cases. The authors consider the reaction of undoubted value for the clinician in deciding the etiology of obscure disturbances of the urinary tract, but useful for the determination of the time of recovery from a gonorrheal disease only with the most critical application.

**Tuberculous Primary Infection and Tuberculous Disease**—Ustvedt's investigations indicate that the first tuberculous manifestation during school age as well as in infancy and during earlier adult age follows fairly closely after the primary infection.

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## COMPENSATED CIRRHOSIS OF THE LIVER

A PLEA FOR MORE INTENSIVE CONSIDERATION OF THE  
EARLIER STAGES OF DISEASE OF THE  
HEPATIC PARENCHYMA

CHARLES B. CHAPMAN, M.D.

WELCH, W. VA.

ALBERT M. SNELL, M.D.

ROCHESTER, MINN.

AND

LEONARD G. ROWNTREE, M.D.

PHILADELPHIA

In a former paper we<sup>1</sup> expressed the opinion that the institution of treatment of cirrhosis of the liver both medical and surgical, is too long delayed and that in most cases diagnosis is not made until decompensation of the portal circulation is apparent, at which time the prospect of ultimate cure is remote or absent. The development of ascites and edema is of ominous prognostic significance, as Aretaeus<sup>2</sup> remarked of dropsy, "very few escape from it, and they more by fortune and the gods than by art." Successful treatment demands earlier recognition and earlier attempts at treatment.

It has been observed that cirrhosis is often overlooked clinically and that it is first recognized at necropsy almost as often as it is correctly diagnosed during life. It is also well known that in the human subject and in the experimental animal extensive hepatic injury may be present without definite signs or symptoms. It is obvious that earlier recognition of these latent cases should make it possible to protect patients from further injury from hepatotoxic substances, even if active therapeutic measures cannot always be applied. This paper is based on the clinical study of a group of cases presenting the earlier symptoms of diffuse hepatic disease, earlier diagnosis, prognosis, protection and treatment are considered.

The term cirrhosis is used here in its broad sense and refers to any type of diffuse chronic degenerative or inflammatory lesion of the liver in which the structure is grossly injured or disorganized. We believe that the so-called atrophic cirrhosis with ascites (decompensated cirrhosis) represents a common end-stage of such processes and that it is not necessarily a specific pathologic

entity. We believe also that diffuse hepatic disease of almost any type may progress to cause portal obstruction, portal hypertension, and ascites. Thus, we shall consider all types of chronic hepatic disease which may, if unrecognized and uncontrolled, progress to the decompensated or ascitic stage. Such inclusion precludes any sharp pathologic differentiation of individual groups. We have, therefore, grouped our cases on the purely clinical basis of etiologic factors, whenever these were known.

There were fifty-eight cases in our series. Forty of the patients were men and eighteen were women, all but sixteen were more than 40 years of age. The youngest patient was 20 and the oldest 80. In twenty-one cases, surgical confirmation of the diagnosis was possible. In the remainder, diagnosis was based on the finding of hepatic enlargement with or without jaundice, and on the results of tests of hepatic function. In many cases a history of some etiologic factor aided in establishing the diagnosis, and in others associated splenic enlargement and other signs of combined hepatosplenic disease were aids. In each case care was taken to rule out malignant or parasitic disease, amyloidosis, or other causes of hepatic enlargement. Although the degree of accuracy in cases in which the diagnosis was not confirmed surgically is somewhat doubtful, nevertheless there was no reasonable doubt concerning the existence of disease of the hepatic parenchyma. The cases included biliary cirrhosis, hepatitis of possible syphilitic origin (excluding simple circumscribed gumma), alcoholic cirrhosis, residual cirrhosis from previous obstructive lesions of the biliary tract, and splenic anemia with cirrhosis. Cirrhosis secondary to hemolytic icterus was not included.

### ETIOLOGY

Twenty-five of the fifty-eight patients had used alcohol freely or even excessively, ten gave a history of syphilis, or they manifested some physical or serologic signs of its presence, five had suffered previously from hyperthyroidism, and fourteen had either a history or present evidence of cholecystic disease. Typhoid and malaria were each mentioned by nine patients. Six patients had the definite syndrome of splenic anemia. In twenty-three of the fifty-eight cases, more than one possible etiologic factor was present. In ten cases there was neither history of previous disease which might have affected the liver, nor objective evidence of any hepatotoxic factor, either past or present.

The large number of cases in which there was an alcoholic history is noteworthy. The incidence of probable syphilis (17.2 per cent) is considerably higher than that prevailing in the general population, but this fact is of little significance in such a small series of cases. Typhoid and malaria were of doubtful etiologic significance in this group. The incidence of cholecystic dis-

From Grace Hospital, Welch, W. Va. (work done while Dr. Chapman was a Fellow in Medicine at the Mayo Foundation) from the Division of Medicine, the Mayo Clinic (Dr. Snell) and from the Philadelphia Institute for Medical Research (Dr. Rowntree).

<sup>1</sup> Chapman, C. B., Snell, A. M. and Rowntree, L. G. *Decompensated Portal Cirrhosis. Report of One Hundred and Twelve Cases*. J. A. M. A. 97: 237-244 (July 25) 1931.

<sup>2</sup> Aretaeus. *The Extant Works*. London, New Sydenham Society, 1856, vol. 20.

case was high. Whether the disease as is noted in these cases was primary or secondary is of course not known, obviously this may vary in individual cases. In the presence of biliary cirrhosis secondary to stone in the common bile duct, a previous infection, or inflammatory disease of the biliary tract, the lesion in the gallbladder may be regarded as undoubtedly primary. The incidence of disease of the gallbladder associated with cirrhosis is high, but the incidence of advanced cirrhosis in disease of the gallbladder is relatively low and often overlooked. That cholecystitis is sometimes merely part of or secondary to the cirrhosis should be more widely recognized. Recent observations by Judd, Nickel and Wellbrock<sup>3</sup> on hepatitis and cholecystitis confirm previous observations on the close association of the two disorders.

Five of the patients had previously suffered from hyperthyroidism. The relation of this condition to hepatic injury was first called to our attention by McIndoe,<sup>4</sup> and the recent studies of Beaver and Pemberton<sup>5</sup> clearly demonstrate the possibilities of residual injury to the liver even after successful thyroidectomy. The liver as well as the heart suffers in hyperthyroidism, whether from overwork, toxemia or both is not clear.

The intimate relation of the spleen to hepatic disease is emphasized by the six cases in our series of Banti's disease with secondary cirrhosis as well as by four cases of so-called secondary splenomegaly with cirrhosis. Although such distinctions with regard to hepatosplenic disease are probably artificial, it is generally held that primary splenic anemia with secondary hepatic changes pursues a more favorable course, particularly after splenectomy, than if the hepatic lesion is the primary factor.

In two cases the onset of hepatic disease was associated with acute infection of the upper part of the respiratory tract, and in one case with an infectious process, probably streptococcal. Such cases emphasize the relation of infectious processes in the causation of hepatitis which may go on to cirrhosis. Jones and Minot<sup>6</sup> have reported cases of infectious jaundice which progressed to actual cirrhosis. Recently Moon,<sup>7</sup> and MacMahon and Mallory<sup>8</sup> reviewed this subject and presented cases of hepatitis and cirrhosis probably due to streptococcal infection. The significance of infection as the cause of recurring jaundice and of acute exacerbations of hepatitis and cirrhosis is widely recognized.

Although single factors may cause cirrhosis, a multiplicity of chemical and infectious agents acting simultaneously or in sequence are probably the usual causes of degeneration and fibrosis of the liver. Opie's<sup>9</sup> work on the combined effect of bacteria and chloroform, Bollman and Mann's<sup>10</sup> experiments with the administration of combined alcohol and carbon tetrachloride, and the twenty-three cases of our series in which possible etiologic factors were multiple, illustrate this point.

# SIGNS AND SYMPTOMS

The complaints noted on the patients' admission to the Mayo Clinic were loss of weight in twenty-one cases, asthenia in thirty-eight, flatulence in thirty-three, abdominal pain in thirty-three, jaundice in thirty-one, constipation in seventeen, diarrhea in eight and gastrointestinal hemorrhage in sixteen. In two cases only there were no symptoms which could be ascribed to hepatic disease at the time of examination. In other words, in fifty-six of the fifty-eight cases, the cirrhosis cannot be strictly regarded as latent. It would appear that careful examination in so-called latent cases may elicit symptoms or signs at some time in the course of the disease. The history, also, may suggest data of importance. In some of our cases the symptoms and signs have been present for years. Symptoms at the time of examination had varied from a few months to twenty years, the average duration was from three to five years. In one case the duration of symptoms was not known, and in two cases an enlarged liver had been noticed ten and fifteen years, respectively, before our examination. The primary symptoms mentioned in forty-eight of the fifty-six cases may be tabulated as follows: indefinite indigestion, usually associated with flatulence, in sixteen cases, pain, colic or soreness in the region of the liver in fourteen cases, severe constipation in three cases, jaundice in six cases, gastrointestinal hemorrhage in five cases, diarrhea in two cases, and enlarged liver in two cases. On the basis of the complete history, which included all complaints up to the time of the patient's admission, the fifty-eight cases are grouped according to the major symptoms: gastro-intestinal symptoms with hemorrhage in eleven cases, gastro-intestinal symptoms with jaundice in twenty-four cases, gastro-intestinal symptoms with both hemorrhage and jaundice in three cases, hemorrhage only in two cases, jaundice only in four cases, and various gastro-intestinal symptoms only in fourteen cases. In none of the cases was there a history of ascites, but in about a third of the cases a history of slight edema of the ankles could be elicited on questioning. It may be noted that jaundice and hemorrhage were frequently mentioned, in many cases, recurrent transient jaundice had been noted over long periods of time. It is impossible to relate these episodes of jaundice to any known factors in the history, but presumably they represent periods of progressive hepatic degeneration. There appeared to be no constant relationship between these episodes and those of gastro-intestinal hemorrhage, although we have observed such relationship in decompensated cirrhosis.

Although asthenia and loss of weight are fairly common in such cases, many of our patients were obese. Prostration and marked loss of weight were rare. The average loss of weight was 23½ pounds. Three patients lost 67, 65 and 60 pounds (30.4, 29.5 and 27 Kg.), respectively, one patient lost 39 and one 35 pounds (17.7 and 16 Kg.), and the remainder lost amounts below these figures.

A palpable enlarged liver was noted in forty-eight cases, a palpable spleen in twenty-seven, slight edema of the lower extremities in twenty, visible jaundice in seventeen, hemorrhoids in nine, visible collateral circulation in seven and hernia in six. Hepatic enlargement was, of course, the principal finding in most of the cases, in fact, it is doubtful whether a clinical diagnosis of compensated cirrhosis is often made in its absence. In five of the ten cases in which the liver was not found to be enlarged at the time of examination, the diagnosis

3 Judd E. S. Nickel A. C. and Wellbrock W. L. A. The Association of the Liver in Diseases of the Biliary Tract, Surg. Gynec. & Obst. 54, 1316 (Jan.) 1932.

4 McIndoe, A. H. Personal communication to the authors.

5 Beaver D. C. and Pemberton J. de J. Pathologic Anatomy of the Liver in Exophthalmic Goiter. Ann. Int. Med. to be published.

6 Jones C. M. and Minot G. R. Infectious (Catarrhal) Jaundice. An Attempt to Establish a Clinical Entity. Boston M. & S. J. 189, 531-551 (Oct. 18) 1923.

7 Moon V. H. Infection as a Cause of Juvenile Cirrhosis. Am. J. M. Sc. 177, 681-690 (May) 1929.

8 MacMahon H. E. and Mallory F. B. Streptococcus Hepatitis. Am. J. Path. 7, 299-325 (May) 1931.

9 Opie E. L. On the Relation of Combined Intoxication and Bacterial Infection to Necrosis of the Liver. Acute Yellow Atrophy and Cirrhosis. J. Exper. Med. 12, 367-387 (May) 1910.

10 Bollman J. L. and Mann F. C. Experimentally Produced Lesions of the Liver. Ann. Int. Med. 5, 699-712 (Dec.) 1931.

of cirrhosis was made at operation, in one case a positive test of hepatic function with bromsulphalein was thought to establish the diagnosis. The remaining four cases were classic examples of Banti's syndrome (splenic anemia), and atrophic cirrhotic livers were noted when splenectomy was performed.

Since enlargement of the liver and spleen are of so much importance in diagnosis, it seems desirable to record all our available data on this point. In the twenty-one cases in which a surgical diagnosis of compensated cirrhosis was made, the size of the liver apparently varied considerably, in eleven cases the liver was described as atrophic and in nine as hypertrophic. In the remaining case, unilateral and almost complete atrophy of the left lobe was noted, the right lobe was also markedly contracted. Notes on the size and weight of the spleen were available in twelve cases, and the sizes varied from twice normal to one spleen weighing 1,270 Gm. The clinician's estimate of the size of the liver and spleen was relatively accurate and corresponded with the surgeon's estimate. These figures give evidence that the presence of an enlarged liver or spleen may be taken at its face value, at least in cases of latent or compensated cirrhosis of this type.

Other physical conditions are less significant. The presence of visible jaundice in seventeen cases is not remarkable in view of the fact that antecedent attacks had occurred in many of the cases. We have commented on the significance of hernia as an early symptom of decompensated cirrhosis and as a common symptom in the well advanced stage of ascites. An explanation of the presence of edema in the lower extremities involves the question of the relation of the liver to metabolism of water. Partial hepatectomy, for example, may occasionally produce generalized edema. Clinical data on this point are lacking, but Addison<sup>11</sup> once said in discussing peripheral edema of patients with fatty livers: "I think it is not improbable, therefore, that this degeneration of the liver may, like mottled kidney, occasionally prove a cause of anasarca." Von Frerichs<sup>12</sup> stated his belief that the edema is due to the backflow through collateral vessels, resulting in increased pressure in the circulation of the lower limbs. Although the mechanism of edema in such disease of the liver is obscure, it has been widely noted as a forerunner of ascites and for this reason should be regarded as significant. It may therefore be assumed that, in cirrhosis of the liver, edema of the feet with the appearance of collateral circulation indicates danger of impending ascites.

#### LABORATORY DATA

Laboratory data in the group as a whole were remarkable chiefly for changes in blood count and test of hepatic function as shown by bromsulphalein.

Moderate secondary anemia with erythrocytes varying from 3,000,000 to 4,000,000 was noted in about a third of the cases. More extreme degrees of anemia could usually be correlated with a history of gastrointestinal hemorrhage. No explanation for this was apparent in cases mentioned previously. King,<sup>13</sup> however, had remarked on the common occurrence of anemia during the ascitic stage. The results of bromsulphalein tests of hepatic function in this group are of considerable significance, from both the diagnostic

and the prognostic standpoints, these tests, together with the finding of hepatic and splenic enlargement, constitute our principal means of identifying compensated cirrhosis. Unfortunately, these tests are not available in every case. Retention of dye graded 1 was noted in five cases, graded 2 in five, graded 3 in twelve, and graded 4 in six. In all the cases graded 4 varying slight degrees of icterus were present, as shown by determination of the serum bilirubin (1.6 to 6 mg. for each 100 cc. of serum), and consequently the tests cannot be regarded as giving an absolute indication of the degree of hepatic injury. In twelve cases, results of the test were negative and dye was not retained in significant amounts. The results of the dye tests could not be satisfactorily correlated with the size of the liver or with the general condition of the patient at the time of the test, but its prognostic significance was considerable, as will be shown.

#### CLASSIFICATION

It is obviously impossible to classify accurately such a heterogeneous group of cases on a pathologic basis without data obtained from necropsy studies. It has also been emphasized that multiple etiologic factors probably were almost the rule in this group, a fact which alone prevents a sharp differentiation of cases on an etiologic basis. Although any classification is thus rendered more or less arbitrary, certain groups of cases have sufficient characteristics in common to merit special consideration. Cases probably of alcoholic origin are particularly conspicuous. It has been noted that about 40 per cent of the patients in this series of cases admitted the free use of alcohol. This is about the usual proportion of patients addicted to the use of alcohol which has been reported in other series of cases of decompensated or ascitic cirrhosis.<sup>14</sup> Fiessinger,<sup>15</sup> in a recent survey of the problem of cirrhosis, noted that alcoholism is held responsible in from 40 to 60 per cent of all cases of portal cirrhosis recently reported from Europe and North America. The two cases reported here are representative of other cases in this "alcoholic" group. In the first case, abstinence from alcohol has apparently served to protect the patient from progressive hepatic injury. In the second case, the lesion was far advanced when discovered, and little improvement could have been expected from any therapeutic measure, however, this patient survived three years after exploration and was in fairly good health at least part of this time, no doubt abstinence from alcohol prolonged life.

#### REPORT OF CASES

CASE 1—A man, aged 53, who registered at the clinic in April, 1925, had been a heavy drinker until 1924 when he had a gastro-intestinal hemorrhage of considerable severity. After convalescence from this he had no serious complaints, although his general health had been below normal. Examination disclosed that the liver was considerably enlarged and firm, and could be felt about 4 cm. below the right costal margin. The Wassermann reaction of the blood and the bromsulphalein test of hepatic function were negative, the basal metabolic rate and the blood count were normal. A test meal showed moderate hyperacidity, but roentgenograms of the stomach gave negative results. An electrocardiogram also gave negative results. Five years later the patient reported that he was well. So far as we know he has had no further trouble.

CASE 2—A man, aged 48, who registered at the clinic in March, 1927, had used alcohol freely prior to 1912, at which

<sup>11</sup> Addison Thomas. A Collection of Published Writings of Thomas Addison. London: New Sydenham Society, 1868, p. 99.

<sup>12</sup> von Frerichs F. T. A Clinical Treatise on Diseases of the Liver. London: New Sydenham Society, 1861, vol. 2.

<sup>13</sup> King R. B. The Blood Picture in Portal Cirrhosis of the Liver. *New England J. Med.* 200:482-484 (March 7) 1929.

<sup>14</sup> Brugsch Theodor. Erkrankungen der Leber in Kraus, Friederich and Brugsch Theodor. Spezielle Pathologie und Therapie innerer Krankheiten. Berlin: Urban und Schwarzenberg, 1923, vol. 6, pp. 405-495.

<sup>15</sup> Fiessinger Noel. La clinique des cirrhoses hépatiques. *Compt. rend. première conf. internat. path. géograph.* 1:155-183 (Oct.) 1931.

time he had had a severe gastro-intestinal hemorrhage following a drinking bout. After this he did not use alcohol and remained in good health until 1920, when he began to have epigastric discomfort about an hour after meals and frequently was awakened by it at night. For three months before registration he had suffered from flatulent indigestion and had also noticed edema of the ankles. He stated that his abdomen seemed to be increasing in size. On examination he seemed to be in good general condition, although he was somewhat overweight. The blood pressure in millimeters of mercury was 166 systolic and 80 diastolic, and the ankles were slightly edematous. Neither the liver nor the spleen could be felt. Laboratory examinations were essentially negative, except for slight secondary anemia, the concentration of hemoglobin (Dare) was 65 per cent and the erythrocytes numbered 3,700,000 in each cubic millimeter of blood. A cholecystogram disclosed the presence of stones. In roentgenograms of the stomach, duodenal ulcer and evidence of pyloric obstruction were noted. Analysis of the gastric content gave evidence of free hydrochloric acid of 24 and total acidity of 46 (titrated against tenth-normal sodium hydroxide). Because of the symptoms of ulcer, the history of bleeding, and the roentgenologic signs of duodenal ulcer, an exploratory operation was advised, although a consultant had felt that the patient probably had portal cirrhosis.

The liver was found to be about half normal size, markedly cirrhotic, and with the characteristic hobnail surface. The surgeon noted the presence of cholecystitis and of duodenal ulcer but felt that any further surgical procedures were inadvisable in view of the condition of the liver. The bromsulphalein test of hepatic function following exploration showed retention of dye, graded 2. The patient returned to his home and lived fairly comfortably for three years. The cause of death was given as alcoholic cirrhosis.

Follow-up studies in cases of the alcoholic group disclosed that the mortality was higher and the duration of life after examination at the clinic shorter than in the group as a whole. Approximately half of the patients were dead on an average of two years after examination. This may mean that, by the time alcoholic cirrhosis is far enough advanced to be detected by present diagnostic means, the degenerative process in the liver has progressed to a point at which tissue cannot be restored to normal. On the other hand, there are numerous records to prove that abstinence from alcohol has resulted in restoration of health of patients with both latent and ascitic cirrhosis. Two of this series of cases followed such a course. The therapeutic implications are clear, the habitual user of alcohol who has an enlarged liver and a positive test of hepatic function with bromsulphalein is in grave danger, and he must in the future avoid all hepatotoxic substances. In view of the unusual conditions concerning consumption of alcohol in the United States in recent years, it is interesting to note that for some years prior to the World War the mortality rate from cirrhosis of the liver was from 12 to 14 per hundred thousand of the population, whereas, since 1929 it has not attained  $7\frac{1}{2}$  per hundred thousand.

Other cases which merit special consideration are those associated with intermittent or chronic non-obstructive jaundice, which may be regarded as due to progressive chronic hepatitis. In the more advanced form, such cases may be designated as biliary cirrhosis. Case 2 represents a typical example of this type of case, the similarity to that vague clinical entity, Hanot's cirrhosis, may be noted.

CASE 3—A man, aged 38, who registered at the clinic in August, 1928, had been in reasonably good health, except for an attack of rheumatic fever until March, 1927, when jaundice developed following acute infection of the upper part of the respiratory tract. At this time his physician at home had noted enlargement of the liver. Since this illness he had had jaundice

intermittently to the time of his registration. He had lost 25 pounds (11.3 Kg.) and had had numerous attacks of digestive discomfort terminating in vomiting.

The patient was slightly jaundiced. The liver was considerably enlarged, but the spleen was barely palpable. The blood was normal, except for slight secondary anemia, and leukocytes numbered from 12,000 to 18,000 in each cubic millimeter of blood. The concentration of bilirubin was 4.1 mg. for each 100 cc. of serum and gave a direct reaction. Roentgenograms of the thorax and stomach gave negative results. A diagnosis was made of an infectious type of biliary cirrhosis.

The patient was examined again in June, 1930, the observations on examination were substantially the same as before. The concentration of bilirubin was 7 mg. in each 100 cc. of serum. He was seen again in 1930, at which time he had no complaints, except for some pain in the region of the liver. The abdomen had increased in size slightly, but there did not seem to be any definite collection of fluid. The liver was somewhat smaller. He had gained a few pounds and felt reasonably well. When last seen, in August, 1931, his condition was such that one might expect the development of ascites within a relatively short time.

These cases represent an unsolved problem. The etiology is unknown, and the therapeutic measures now at our command are not successful except in the occasional case. One patient formerly under our care improved temporarily by the use of emetine. Antisyphilitic treatment, given empirically, has been of little benefit. Surgical treatment has likewise been unsuccessful as a rule, although some good results have been reported following drainage of the common bile duct with a T tube. In two cases of the series, splenectomy was performed with some temporary general benefit, but without effect on the icterus or on the size of the liver. As in cases in which patients are addicted to the use of alcohol, the prognosis in the cases with icterus is unfavorable when compared to the group as a whole, of the patients presenting the picture of progressive chronic hepatitis, six died on an average of three years after examination. In fact, the course, on the average, has been distinctly unfavorable among the whole group of patients who had jaundice on admission. This is perhaps to be expected, since the development of jaundice in cases of hypertrophic or atrophic cirrhosis has long been regarded as of unfavorable prognostic significance, in fact, this observation forms the basis of one of the aphorisms of Hippocrates.<sup>16</sup> It should be emphasized that these statements in regard to the prognostic significance of jaundice do not apply to lesions of the hepatic parenchyma which follow previous obstruction of the common bile duct from stone or stricture, although these conditions are often associated with extensive hepatitis and so-called obstructive cirrhosis or cirrhose résiduelle.<sup>17</sup> Three patients with advanced cirrhosis secondary to biliary obstruction are included in this study, and in general they have made unexpectedly good recoveries following relief of the obstruction.

In any series of cases of cirrhosis, clinical examples of the disease may be encountered in which an etiologic factor is not apparent. In some cases the question of residual hepatic lesions from previous infectious disease has been considered as a possible causative factor, however, in reality the cause is unknown, as in the following case.

CASE 4—A man, aged 59, who registered at the clinic in October, 1925, had a definite attack of jaundice in 1900 which had lasted two weeks. He had not used alcohol and had had

16 Hippocrates. *Genuine Works of Hippocrates*. London: New Sydenham Society, 1849.

17 Fiesinger, Noel, and Albot, Guy. La cirrhose résiduelle à la suite des aténoses prolongées de cholédogue. *Bull. et. mém. Soc. méd. d. hop. de Paris* 47: 150-157 (Feb. 2) 1931.

no severe infectious diseases. Since 1920 he had suffered from flatulent indigestion and occasionally regurgitated food after a full meal. He had lost 15 pounds (6.8 Kg) in the preceding year and complained of marked weakness. On examination he was in fairly good condition. The blood pressure in millimeters of mercury was 140 systolic and 92 diastolic. The liver was greatly enlarged and extended almost to the umbilicus. Urinalysis, blood count, Wassermann reaction of the blood, and examination of the stools for blood and parasites gave negative results. Roentgenograms of the thorax, stomach, gallbladder and colon were negative. The test meal showed absence of free hydrochloric acid. Tests of hepatic function showed retention of dye graded 1. Since no source for metastatic malignancy could be made out, a tentative diagnosis of cirrhosis was made. In December, 1930, the patient reported that he was getting along quite well, except for some pain and soreness over the liver and some belching and distress after meals. Jaundice, edema or ascites had not developed and he was apparently able to carry on his usual duties.

The inclusion of syphilis as an etiologic factor in cirrhosis is open to criticism. As Fiessinger stated, it is difficult to evaluate the syphilitic factor in hepatic disease of this type. The matter has been considered fully in a paper by O'Leary, Greene and Rowntree.<sup>18</sup> We have not included in this series any frank or proved case of gummatous syphilitic hepatitis or cirrhosis, noticing only those in which there was either a history of syphilis or positive serologic evidence of its presence together with signs of diffuse injury to the hepatic parenchyma. The inclusion of this small group has been further complicated by a history of alcoholism in several of the cases. Suffice it to say that the prognosis in this group of somewhat uncertain etiology has been surprisingly good, better on the average than that of patients with a history of alcoholism or of chronic hepatitis and jaundice. Only one of the ten patients in this group is known to have died, the other nine patients are in reasonably good health. The relative role of alcoholism and syphilis is baffling to the physician and in some cases equally baffling to the pathologist. For example, it is not uncommon to find a typical atrophic hobnailed liver at necropsy in a case previously diagnosed syphilitic hepatitis.

Six patients in the series presented Banti's syndrome of splenic anemia. Splenectomy was performed on all of these and in each instance the surgeon noted varying degrees of cirrhosis. It is of interest that five of these six patients had had hematemesis before admission. Five of the patients are still living and in reasonably good health, one patient died of unknown causes, probably hemorrhage, almost three years after operation. Splenectomy offers the greatest aid in cases of splenic anemia which have not progressed to the stage of decompensated cirrhosis with ascites, and these figures furnish further argument for early operation in such cases.

#### RESULTS OF OPERATION

The operative results in the group of fifty-eight cases with latent cirrhosis are of interest. For various reasons, laparotomy was performed on twenty-eight patients, twenty-four at the clinic and four elsewhere. Some of the group of twenty-four were operated on more than once, either at the clinic or elsewhere. Eleven of the twenty-eight patients are known to be dead. All except three lived longer than seventeen months after operation, these lived one, two and six months, respectively, thus illustrating the relatively

small surgical risk in this stage of cirrhosis as contrasted to the relatively high risk once ascites has developed. Talma-Morison operations were not done, although the liver was described as cirrhotic or atrophic, and there was evidence of portal obstruction in certain cases. Splenectomy was performed in twelve cases, including the six cases of splenic anemia mentioned. Eight of these patients who underwent splenectomy were living on an average of four years after operation, four died within an average of slightly less than two years. Various operations on the biliary tract (cholecystectomy, cholecystostomy and choledochostomy) were performed on ten patients, five of whom died on an average of six years after operation, the remaining five were living an average of four years after operation. The remaining six operations were explorations. Four of the patients were alive an average of thirty months after operation, and two died an average of twenty months after exploration.

These figures demonstrate that surgical exploration or even major surgical procedures do not involve a particularly high immediate risk in latent or compensated cirrhosis, and in doubtful cases exploration may be done if surgical indications exist, without fear of a high mortality because of the hepatic lesion. This is, of course, in decided contrast to the generally appreciated danger of surgical intervention after ascites has developed in portal cirrhosis.

#### COURSE AND PROGNOSIS

Our attempts to follow the clinical course in this group of cases of compensated cirrhosis were reasonably successful, even though details were lacking in many of the cases in which the termination was fatal. Of the fifty-eight patients in the series, twenty-five are dead. Three patients died following profuse gastrointestinal hemorrhage, two died in coma, probably of hepatic origin and one patient died as a result of intercurrent infection. Four patients died from causes not related to the liver or biliary tract. In sixteen cases there is no accurate information in regard to the terminal illness. Five patients had ascites before death, and two patients had progressive enlargement of the liver. The average duration of life dating from the onset of symptoms was about five years.

Of the thirty-three patients living, twenty reported that they were reasonably well. Six had had episodes of jaundice since examination at the clinic, and three had had gastro-intestinal hemorrhages. The remaining thirteen patients complained of gastro-intestinal symptoms of various degrees of severity. The average duration of symptoms from the onset, of the thirty-three living patients, was slightly less than eight years, this is illustrative of the remarkable latency of hepatic disease.

The duration and prognosis of the compensated type of cirrhosis as compared to the decompensated type with ascites may be summarized as follows. In the series of 112 cases of decompensated or ascitic cirrhosis reported previously,<sup>1</sup> eighty-four patients (75 per cent) had died on an average of sixteen months after ascites was first noted, and twenty-eight (25 per cent) are living an average of thirty-eight months after the development of ascites. In the series of fifty-eight cases of compensated or nonascitic cirrhosis, reported here, twenty-five patients (43 per cent) had died on an average of sixty months after symptoms were first noted, whereas thirty-three (57 per cent) are living an average of almost eight years after the onset of symptoms. In

18 O'Leary P. A., Greene, C. H. and Rowntree L. G. Diseases of the Liver. VIII. The Various Types of Syphilis of the Liver with Reference to Tests for Hepatic Function. Arch. Int. Med. 44: 155 193 (Aug.) 1929.

a careful study of the data in these fifty-eight cases it was difficult to elicit any one sign or symptom on which to make a prognosis in the individual case. The influence of age and sex on prognosis appears to be negligible except that in male patients who have died the duration of symptoms was much longer than in female patients. There is some evidence to show that the patients with the largest livers pursue a more unfavorable course than those whose livers were described as small. This is in contrast to the usual statement that the large liver represents an early stage of cirrhosis. It was Hanot's<sup>19</sup> belief that variations in the size of the liver are due to differences in the type of cirrhosis and that patients with hepatic and splenic enlargement and chronic jaundice represent a slowly progressive type of hepatic disease. Price<sup>20</sup> held the opposite view, that the hypertrophic liver represents a more acute type of hepatic degenerative change. Murchison<sup>21</sup> stated that the liver is not always smaller in the later stages of cirrhosis, a view with which clinicians are generally agreed. In Bollman and Mann's experiments the size of the liver seemed to be dependent on the relative amount of atrophy and hypertrophy in the same liver rather than an expression of the stage of the disease. Fagge's<sup>22</sup> statistics seem to show that latent cirrhotic livers are larger and that the size of the liver cannot be related to prognosis. Rolleston and McNee<sup>23</sup> stated their belief that cirrhotic livers are large in the early

compensated cirrhosis who did not retain dye are living. In this connection it must be recalled that a negative test of hepatic function does not mean that a patient does not have cirrhosis or that the disease will not progress rapidly as it did in three of our cases in which tests of hepatic function were negative. In the ten cases in which retention of dye on tests of hepatic function was graded 1 or 2, four patients have died, one from profuse gastro-intestinal hemorrhage. In two thirds of the cases in which retention of dye was graded 3 or 4, the patients have died, most of them within a relatively short period after being examined. Although some of the patients with higher degrees of retention of dye had demonstrable jaundice and their tests cannot therefore be taken at face value, it is apparent that a high degree of retention indicates an unfavorable prognosis.

## COMMENT

The cases considered in this paper represent a mixed and somewhat confusing picture. We feel that the presentation of the group is nevertheless justifiable, since so little is known about the nature, course and outcome of cases seen in the earlier phases of disease of the hepatic parenchyma. Both the lesions and the clinical pictures which they produce are largely unclassified, and indeed at times hardly lend themselves to accurate classification. The data presented seem to justify certain conclusions. It is apparent that the alcoholic patient with an enlarged liver and a positive bromsulphalein test has only about an even chance of surviving for three years or more, regardless of the fact that he has not reached the stage at which most clinicians would make an unqualified diagnosis of cirrhosis. It also appears that the patient with chronic or intermittent jaundice and an enlarged liver has an equally unfavorable prognosis. If syphilis is included as an etiologic factor, the gravity of the situation may be somewhat decreased. Patients with Banti's disease and secondary cirrhosis who have not yet reached the stage of portal stasis and ascites have a reasonably good outlook. Since, in the whole group, surgical exploration appears to be well tolerated, perhaps it should be considered more often, especially in view of the possible relation of splenic and cholecystic disease to cirrhosis. No doubt omentopexy or ligation of the venous channels communicating with the esophageal veins, as performed by Walters, could be done with greater prospect of benefit in compensated cases.<sup>28</sup> We feel that either a history of hemorrhage or the finding of collateral venous circulation may constitute a definite surgical indication in compensated cirrhosis of this type. The presence of jaundice or a history of intermittent episodes of jaundice are almost equally important in this connection, since in the jaundiced cases the possibility of a previously unsuspected stone in the common bile duct must always be kept in mind. Any mention of a surgical approach to hepatic cirrhosis of this type will perhaps be regarded as radical, however, we feel that these cases should not always be dismissed with the statement that nothing can be done. For instance, if patients have an alcoholic background and a history of hematemesis, the question of a Talma-Morison omentopexy and ligation of collateral venous channels connecting with the esophageal plexus should be seriously considered. Excellent clinical results have been obtained by this procedure, and failures have been chiefly due

## Results of Tests of Hepatic Function

	Patients Tested	Retention of Dye				
		Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
Decompensated cirrhosis 112 cases 28 patients living Patients still living	87	40%	76%	20%	41%	8 7%
Compensated cirrhosis 58 cases 33 patients living Patients still living	40	75%	80%	40%	33%	33 3%

stage and decrease in size later. This observation was made also by Bright,<sup>24</sup> von Frerichs, Duckworth,<sup>25</sup> Cornil,<sup>26</sup> and Snell,<sup>27</sup> who show that, in the late stages of the cirrhosis, the liver, as seen at necropsy, is reduced in size.

Laboratory data furnish two points of prognostic interest. In this series the patients with anemia apparently had a less favorable outcome than those with normal blood. The three most anemic patients, all of whom had less than 3,000,000 erythrocytes in each cubic millimeter of blood, have died. They presented unmistakable evidence of hepatic disease. Tests of hepatic function with bromsulphalein, however, are of much more definite prognostic significance. In fact, as shown in the table, the results in this group roughly parallel those previously reported by us in decompensated cirrhosis. Seventy-five per cent of patients with

19 Hanot, V. C. La cirrhose hypertrophique avec ictere chronique. Paris. Rueff et Cie. 1892.

20 Price, J. A. P. On a Case of Hypertrophic Cirrhosis with Remarks on the Pathology of Cirrhosis. Guy's Hosp. Rep. 42:295 336. 1883-1884.

21 Murchison Charles. Clinical Lectures on Diseases of the Liver. London. Longmans Green & Co. 1885.

22 Fagge, C. H. Observations on Some Points Connected with Diseases of the Liver or of the Peritoneum. Guy's Hosp. Rep. 20:155-223. 1875.

23 Rolleston, H. D., and McNee, J. W. Diseases of the Liver. Gallbladder and Bile Ducts. London. MacMillan & Co. 1920.

24 Bright, Richard. Observations on Abdominal Tumors and Intumescence Illustrated by Cases of Diseased Liver. Guy's Hosp. Rep. 5:298-380. 1840.

25 Duckworth, Dyce. Notes upon Some Forms of Hepatic Enlargement. St. Bartholomew's Hosp. Rep. 10:53-64. 1874.

26 Cornil, V. Note pour servir à l'histoire anatomique de la cirrhose hépatique. Arch. de physiol. norm. et path. 1:265-287. 1874.

27 Snell, A. M. Clinical Aspects of Portal Cirrhosis. Ann. Int. Med. 5:338-357 (Sept.) 1931.

28 Rowntree, L. G., Walters, Waltman, and McIndoe, A. H. End Result of Tying of the Coronary Vein for Prevention of Hemorrhage from Esophageal Varices. Proc. Staff Meet. Mayo Clin. 4:263-264 (Sept. 24) 1929.

to the very advanced state of the disease at the time of operation. Splenectomy may also be considered in this connection, it is performed too late in many instances and may offer far more in the latent case of cirrhosis, particularly if there is a history of hematemesis and anemia, with moderate or low degrees of retention of dye. It is apparent that surgical procedures in these latent or compensated cases should be considered more seriously in the early stage than in the advanced or decompensated stage.

#### CONCLUSION

The fact that most of the known causes of diffuse disease of the hepatic parenchyma are in themselves preventable or controllable must be emphasized. The medical profession should lower its threshold of suspicion relative to cirrhosis of the liver, center its attention on the earlier stages of hepatic disease, and search for evidence when the history and clinical and laboratory data are suggestive rather than clearly indicative of its presence. In all probability it is in this stage of the disease that further progress may be expected along lines of preventive medicine and treatment.

### THE INCIDENCE OF FEMORAL HERNIA FOLLOWING REPAIR OF INGUINAL HERNIA—ECTOPIC RECURRENCE

#### A PROPOSED OPERATION OF EXTERNAL AND INTERNAL HERNIORRHAPHY

EDWARD RAYMOND EASTON, MD  
NEW YORK

Various forms of hernia are liable to develop after any intra-abdominal operation. Direct hernia has occurred following operation for oblique inguinal hernia and occasionally, though rarely, after an inguinal operation for femoral hernia. In such cases there probably existed a small congenital diverticulum of the peritoneum, which was overlooked at the time of operation. The increase in intra-abdominal pressure due to reduction of the inguinal hernia, together with the stretching and weakening of Hesselbach's triangle caused by the deep sutures, may be sufficient to bring on a direct hernia.

Femoral hernia, likewise, occasionally appears after operation for inguinal hernia. In this case, the increased size of the femoral opening due to the pulling upward of Poupart's ligament in the course of repair of the inguinal hernia may be an etiologic factor.

During the past seven years I have observed four cases of femoral hernia following repair of inguinal hernia by the Bassini method, and one case was mentioned to me by Dr. Ellsworth Eliot, my chief at Knickerbocker Hospital, who has allowed its publication here.

CASE 1—A woman, aged 28, with well developed musculature, was operated on for oblique inguinal hernia, which extended slightly below the external ring. Eighteen months afterward, a swelling appeared below the inner extremity of the scar, which was called a recurrence by the family physician. On operation it proved to be a femoral hernia the size of a small orange. Palpation of the inguinal region through the neck of the sac showed a firm scar with no indication of bulging.

In discussing this matter with the chief medical examiner of the New York State Department of Labor,

Dr. Raphael Lewy, I found that the condition is not so rare as a survey of the literature for the past eighteen years has indicated. During this period, only two cases are mentioned. One is reported as follows by Taylor,<sup>1</sup> who collected the results of operations for inguinal hernia performed at Johns Hopkins from 1899 to 1918.

CASE 2—A man, aged 37, was operated on for indirect bilateral inguinal hernia on Aug. 8, 1910. The conjoint tendons were good on both sides. On the left side high ligation of the sac was done with heavy silk, the cord was not transplanted, and the cremaster muscle was drawn under the internal oblique muscle. There was no sac on the right side, prehermal weakness was noted. The cord was not transplanted and closure was done similar to that on the left side. Healing occurred on both sides by first intention. There was a small direct recurrence on the left side about one year later, and a femoral hernia on the right side two years later. Operation was performed on these hernias eight years after the first operation and the foregoing conditions were confirmed, there being a small rent in the aponeurosis of the right side through which a little fat protruded.

The second case is reported by Studinsky,<sup>2</sup> who believed that the hernial repair, which was performed in this case according to the method of Girard,<sup>3</sup> was an etiologic factor in the development of the femoral hernia. The history, however, suggested a preformed sac, such as a dimple or diverticulum, because of the patient's having femoral hernia on the other side.

CASE 3—A man, aged 49, was admitted to the Central Prison Hospital at Kiev, Russia, in January, 1926. A few years previously he had an operation for left inguinal hernia and left testicular tumor. The growth had been removed and had recurred on the same side lower down. In the left inguinal region, below the inguinal ligament, a reducible tumor was found, from 6 to 7 cm. in diameter. Above the inguinal ligament, parallel to the inguinal canal, was a scar approximately 6 cm. long. An irreducible tumor in the right scrotal area was 15 cm. long and 10 cm. wide. A second and much smaller growth occupied the region of the inguinal canal 2 cm. above the inguinal ligament. It had a tympanic sound and crackled on reposition. The diagnosis was left femoral hernia, right inguinal hernia and right hydrocele.

Girard's herniotomy for right inguinal hernia was done and Winkelmann's operation for hydrocele, local anesthesia being used. Recovery occurred by first intention. The muscles, Poupart's ligament and the aponeurosis of the external oblique muscle were found to be weak. Permission to perform an operation for the femoral hernia was refused.

About a month later, a small femoral hernia appeared on the right side. The diagnosis was bilateral crural hernia.

Operation was then done on the left femoral hernia, by removal of the hernial sac. Recovery occurred by first intention. Two months later operation was done on the right femoral hernia, at which time examination showed no recurrence above or below the inguinal ligament after left herniotomy.

The following are the cases which came under my own observation.

CASE 4—J. S., an employee of the New England Panama Hat Company, was operated on at Flower Hospital, in 1926, for a reducible right inguinal hernia complicated by a hydrocele of the cord. The hydrocele was removed at operation and a hernioplasty done. A year later, after a fall, a right

1 Taylor, A. S. Results of Operations for Inguinal Hernia Performed at Johns Hopkins Hospital from Jan. 1, 1899 to Jan. 1, 1918, *Arch. Surg.* 1: 382 (Sept.) 1920.

2 Studinsky, I. V. Herniotomy in Inguinal Hernia. *Arch. f. klin. Chir.* 154: 142, 1929.

3 Girard divided the aponeurosis of the external oblique muscle so as to leave a strip of it the width of a finger along Poupart's ligament to form the lower flap, which was lapped over the upper one after the latter had been stitched to Poupart's ligament.

femoral hernia developed. The patient was operated on by another surgeon, who confirmed the diagnosis and found no inguinal hernia present.

CASE 5—J P was operated on at Lexington Hospital in 1926 for bilateral incomplete inguinal hernia, each hernia being about the size of a plum. This case especially typified the relaxed abdominal walls and wide open external rings that were present to a greater or less degree in all the cases in this

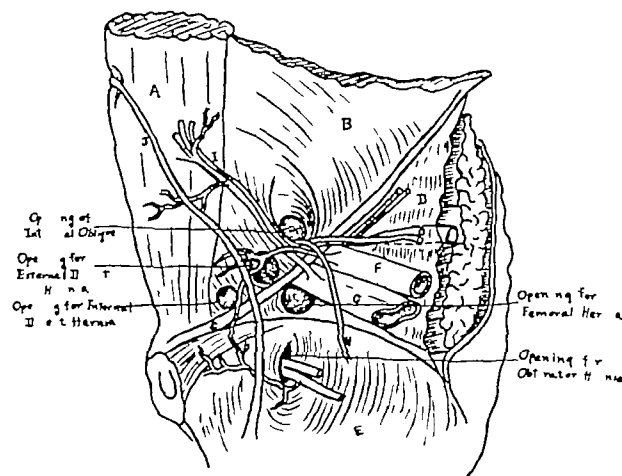


Fig 1—Various sites for hernia in the inguinal and femoral regions (Modified after Ferguson). A indicates the rectus muscle B the transversalis fascia C Poupart's ligament D femoral fascia E pectineus muscle F iliac artery G iliac vein H vas deferens I deep hypogastric vessels and J obliterated hypogastric artery.

series. Double femoral hernia developed within three months after the inguinal repair, and an operation was performed by another surgeon at the Hospital for Ruptured and Crippled.

CASE 6—S B was operated on at the Lexington Hospital in 1926 for indirect right inguinal hernia. Repair of this lesion was followed within three years by the development of a direct hernia, which was operated on, a right femoral hernia appearing three months later.

CASE 7—B M was operated on at the Fordham City Hospital in 1928 for right inguinal hernia. Within two or three months right femoral hernia developed. The patient was operated on by another surgeon and was observed only casually by me during a subsequent examination.

In May, 1929, I saw a patient at Broad Street Hospital with an epigastric hernia about the size of a small plum 2 inches above the umbilicus. There was also an impulse in the right inguinal region, and in the right femoral region was a mass which suggested a fatty tumor, as no impulse could be elicited on coughing. The epigastric hernia was repaired with a side-to-side overlapping of the fascia. An incision was then made in the inguinal region, and after the external ring had been dissected off a search was made for a sac. None was found, although there was a slight bulging of Hesselbach's triangle, as in direct hernia. An investigation of the supposed fatty tumor below Poupart's ligament disclosed that it consisted of a mass of preperitoneal fat which had protruded through the femoral canal (not an uncommon finding in femoral hernia), with a distinct femoral sac about  $2\frac{1}{2}$  inches in length. After removal of the sac, the double purse-string operation for obliteration of the femoral canal was done. Closure of the inguinal field was then made by overlapping the external aponeurosis with two rows of sutures, which permanently closed the external ring after transplantation of the cord.

The presence of a femoral hernia simulating the symptoms of an inguinal hernia in this case raised

the question of the possibility of an undiscovered femoral hernia in the other cases reported. It seems probable, however, that no femoral hernia existed in any of these cases at the time of the original operation, and that only a dimple or diverticulum of the peritoneum then present in the region of the femoral canal might have predisposed to the development of the subsequent femoral hernias.

A recent review of the work of Banerjee<sup>4</sup> in operating on hernias through the abdominal approach reveals that of 200 abdominal operations performed by him and his associates only one failed to show a dimple, or a slight diverticulum in one or both inguinal regions (fig 1). In one instance a well defined congenital sac was discovered in a child 6 years old in whom no hernia had been suspected.

It is not unlikely that the existence of such a dimple or diverticulum, in itself a predisposing factor to the development of an actual hernia, has not received adequate attention and that if such a condition is disclosed in the course of any abdominal operation it should be corrected by Banerjee's procedure. It seems, however, that the cure of inguinal or femoral hernia does not lie solely in the internal herniorrhaphy but that it must be supplemented by some external method. By such a combined method, recurrence becomes less likely than when either procedure is used alone. The following operation is therefore suggested for use in selected cases, particularly those in which the patients have flabby or fat abdominal walls.

#### METHOD

The inguinal region is exposed through an incision from a point half an inch above Poupart's ligament, at the junction of its outer and middle thirds, downward and inward to a point half an inch above the spine of the pubis, whence the incision is extended across the midline transversely for the distance of 1 inch (fig 2). If the operation is for a double

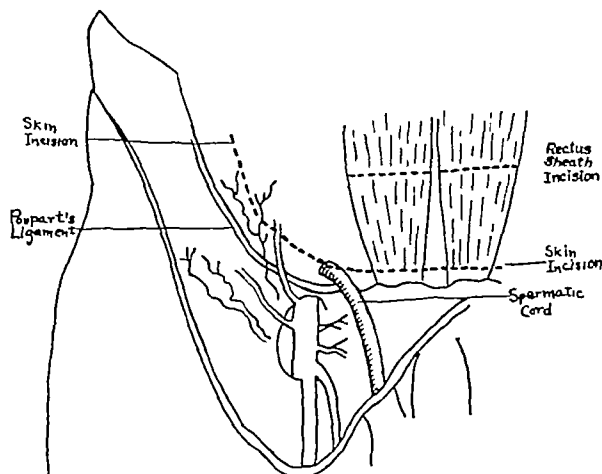


Fig 2—External view of inguinal region showing incisions.

hernia, the incision is continued in like manner on the other side. The incision is deepened to and through the aponeurosis of the external oblique, dividing the external ring in the direction of its fibers.

The procedure from this point depends largely on whether an adherent sac or contents are found after the sac is dissected free from the cord. If the sac is dissected free without

<sup>4</sup> Banerjee, P. Intraoperative Herniorrhaphy in Inguinal Hernia. *Surg. Gynec. & Obst.* 54: 706 (April) 1932.

difficulty or without adherence of the contents, the rectus sheath is then incised transversely according to the Pfannenstiel method at a point above the crest of the pubis in line with the internal ring. This is easily done by retracting the upper flap of the skin incision.

The transverse incision thus described is never longer than the breadth of the sheaths of both recti. In fact, it need be no more than  $2\frac{1}{2}$  inches long (fig 2).

The peritoneum is then opened in the midline and the internal opening of the hernia dealt with by inversion of the hernial sac into the abdomen, all of the sac except a fringe or margin about three fourths of an inch wide being trimmed off.<sup>5</sup> A purse string suture is then placed in the neck of the sac and tied within the abdominal cavity (fig 3 A). The free edge of the sac then remaining is turned back and tacked down throughout its circumference by interrupted catgut sutures through the peritoneum, so as to form a plug or button-like structure (fig 3 B).

After this procedure, the peritoneum is grasped laterally to this area with several Kocher clamps and sutured over the preceding layers of the hernial sac (fig 3 C).

If, however, the sac has been found adherent and prolonged into the scrotum, it is dissected free at the internal ring sufficiently to allow a cuff 2 inches in length to be inverted into the peritoneal cavity, where it can be treated in the same manner as described. If any contents, such as omentum, intestine or bladder, are found in the sac, it might be of distinct value to open the peritoneum through the Pfannenstiel

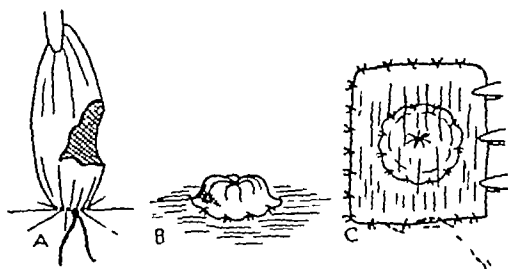


Fig 3—A the sac is resected a cuff three fourths inch wide being left. B the cuff is reversed on itself and sutured to the peritoneum. C a fold of adjacent peritoneum is plicated over the button like structure.

incision at once before attempting resection of the sac, in order to observe the condition on the inside of the cavity and deal with it from that angle.

The original incision is then closed by the method advised by Pfannenstiel, the rectus sheath being sutured with interrupted chromic sutures.

After the rectus sheath has been repaired the inguinal operation is continued with whatever form of repair seems appropriate for the individual case. In general, a type of operation such as Ferguson's<sup>6</sup> seems appropriate for indirect hernia, while the Halsted method, with the use of a flap of rectus sheath in case of a deficiency of the conjoint tendon, would be better for the direct hernia. Occasionally, transplantation of the cord according to the method of Bassini, Andrews or Scott is more suitable to the individual case.

I believe an effort should be made to correct, by interrupted or continuous sutures, the deficiency of the transversalis fascia both at the internal ring and at Hesselbach's triangle and to repair the damage done to the cremaster muscle by dissection of the sac. Also, the overlapping of the external oblique muscle strengthens the hernial repair, no matter what type of operation is carried out. The incision is then closed with interrupted or continuous sutures, according to the surgeon's preference.

5 Some practical difficulty may be encountered in inverting the sac. This may be facilitated by placing two sutures through the tip of the sac which can readily be tied to the blades of short curved sponge forceps and the sac drawn up through the internal ring into the peritoneal cavity. Before one inverts the sac it might be well to place a purse-string suture round the neck from the outside which may be tied after inversion. This closes the orifice while the internal herniorrhaphy is being done and also reinforces the second purse-string suture to be made on the inside.

6. Ferguson A. H. *Technic of Modern Operations for Hernia* ed 2 Chicago, Cleveland Press 1912

#### COMMENT

A somewhat similar operation was suggested by La Roque some years ago. He opened the peritoneal cavity well above the hernia, thus giving an excellent exposure of the vas deferens and bladder and assuring a high removal of the sac. The usual Bassini incision is made, and the hernial sac and cord are exposed. The fibers of the internal oblique and transversalis muscles are separated an inch above their lower margins, and the peritoneum is opened above the neck of the sac. If the muscles are thinned, they may be retracted upward. The hernial contents are examined and dealt with from the abdominal side. A finger is passed into the sac to aid in freeing it up to a point within the internal ring. Forceps are inserted in the sac, and the lowest portion is grasped and inverted into the abdominal cavity. The sac and redundant peritoneum are pulled upward and sutures are passed through the peritoneum an inch above the internal ring, which is completely obliterated. Each of these sutures includes a portion of the original peritoneal incision. The sac is excised, and the split muscle fibers are sutured together. The inguinal canal is closed in the usual manner, with or without transplantation of the cord, and the superficial fascia and skin are sutured.

Theoretically, this operation seems to be subject to the disadvantage that it does not permit inspection of all possible hernial sites. It also has a tendency to weaken adjacent muscular structures and fails to strengthen the region of the internal opening of the hernia.

Kocher and McEwen dealt with the sac by transplanting it, Kocher into the subcutaneous tissues and McEwen extraperitoneally under the internal oblique muscle. Kocher's procedure is not now used, but McEwen's method of dealing with the stump of the sac has in its favor that it transplants the neck of the sac to a point less liable to recurrence.

Ferguson believed that the cause of inguinal hernia was a deficiency of the internal oblique and transversalis muscles at Poupart's ligament and in 1899 devised an operation to correct this condition. This is the same as the modified Bassini operation up to the point of closure. The cord is left undisturbed and the internal ring, which consists of transversalis fascia, is narrowed by catgut sutures. The internal oblique and transversalis muscles are stitched to the shelving edge of Poupart's ligament. The aponeurotic flaps are overlapped and sutured, and the external ring is restored. The subcutaneous tissues and skin are closed in the usual manner.

By not disturbing the cord, this procedure has the evident advantage of avoiding injury to the vas and adjacent blood vessels and nerves. Also, the cremaster muscle remaining substantially in its normal position may assist in curing the hernia, since its action tends to have a shutter-like effect on the inguinal canal. However, the operation does not prevent the chance of recurrence, which the author admits did take place.

Banerjee's operation, carried out through the midline incision, may ultimately be followed by diastasis of the rectus muscles. For this reason, the midline incision is much less desirable than the Pfannenstiel incision, which, in the absence of infection, is rarely followed by any abdominal weakness.

Banerjee claimed that but little could be done externally without damage to muscle, blood supply and

nerves The fact that the vast majority of hernias have been cured by the external operation alone, however, appears in part to do away with this objection

From the standpoint of the onset of hernia, it would seem a good surgical principle to begin to set up a wall against its reformation at the site of exit in the abdominal wall On the other hand, Banerjee's operation will not be universally adopted because of the feeling that the plication of peritoneum does not adequately prevent recurrence at the point where the former hernia existed

If, in the course of operation, a femoral hernia is found, it must be attacked either by internal herniorrhaphy or by the Moschowitz operation, with an extension of the incision downward, if necessary, as described by Moschowitz in his original communication The occurrence of a femoral hernia, or at least of the prehernial dimple, is probably more frequent than is ordinarily reported

Dr Lewy, whose experience in examining these cases has been unique, believes that several factors contribute to the formation of these femoral hernias occurring after inguinal repair

1 The contents of the inguinal hernia having been returned to the abdomen, the abdominal cavity is too small to hold them

2 Repair of inguinal hernia, suturing the conjoined tendons and internal oblique and transversalis muscles to Poupart's ligament, may have had a tendency to elevate the ligament in certain cases in which relaxation of this structure is already present, thus increasing the patency of the femoral canal

3 There is individual predisposition to hernia by reason of fat, flabby muscles and relaxed ligaments, also certain cachectic states, including tuberculosis and malignant growths, in which hernia is not uncommonly found

Consideration of these interesting observations of Dr Lewy's seems to justify the conclusion that a femoral hernia was not present at the time of the inguinal operation in any of the four cases observed by me, but had developed later as an ectopic recurrence, just as direct hernia follows repair of the indirect types

To obviate such a sequel, the operation herein proposed is designed to set up a barrier both internally and externally which seems unlikely to yield, and in that event recurrence would at least be uncommon It may be said to present the following advantages

1 High removal of sac

2 Allowing for

(a) Thorough inspection of the bladder, omentum, intestine or other contents of the sac

(b) Complete repair of all the layers of the abdominal wall

(c) Removal of the appendix, or the performance of other surgical procedure through the midline not incompatible with the repair of hernia

(d) Tightening up by plication of any preformed hernial sac (dimple, diverticulum or unclosed funicular process) at any other hernial site (direct or femoral)

3 Putting a cork, or plug, in the neck of the hernial sac

361 West Fifty-Seventh Street.

## TYMPANIC PLEXUS NEURALGIA

TRUE TIC DOULOUREUX OF THE EAR OR SO-CALLED  
GENICULATE GANGLION NEURALGIA CURE  
EFFECTED BY INTRACRANIAL SECTION  
OF THE GLOSSOPHARYN-  
GEAL NERVE

FREDERICK LEET REICHERT, M.D.

SAN FRANCISCO

Twenty-four years ago, an operation was performed in the now famous case of Clark and Taylor<sup>1</sup> for a tic douloureux of the left ear and external auditory canal which had been present for two years It was a paroxysmal intermittent pain without known cause with "not only a stabbing pain in front of the ear, but also a steady pain in the depths of the ear, on the anterior wall of the external meatus At times there was a moderate degree of neuralgic pain in all three distributions of the trifacial and in the occipital region" A number of neurologists were forced to conclude, guided by the fact that Hunt's<sup>2</sup> zoster zone of the geniculate lay just in the interior of the auricle and external canal, that the lesion was a true tic douloureux of the geniculate system of the facial nerve Under ether anesthesia by a unilateral cerebellar approach, Taylor divided the sensory part (pars intermedia) of the seventh nerve intracranially He was forced also to divide the facial and part of the acoustic nerve Immediately after operation all pain ceased except for a period of two hours on the twelfth day, when the patient suffered "severe pain in the left ear which closely resembled the pains before operation A slight redness of the external auditory canal, observable before operation," disappeared shortly after operation Six years later the patient was seen by Dr Crile, who found that she had remained free from attacks and that the facial palsy had disappeared

*History*—A woman aged 31, a telephone operator, with a history almost identical with that presented in the case of Clark and Taylor, was referred to the Stanford University Clinic, Oct. 3, 1932, because of a severe pain in the left ear In 1921, she had been forced to dispense with ear phones for a short time because of a painful left concha She had no further difficulty until the spring of 1932, when a sensation of drawing and discomfort in the left upper part of the face was noticed, which by August had extended from the cheek to the forehead and occipital region A coryza at this time was followed in two days by sharp stabbing pain deep in the external auditory canal, causing her to shriek out and grab her ear The paroxysms came frequently each day except for an interval of twelve days following the injection of the sphenopalatine ganglion with procaine hydrochloride Subsequent injections gave no relief Besides the excruciating lancinating pains in the auditory canal there were at times an itching of the upper anterior wall of the meatus, aching pains in the left side of the face, nose, eyeball and parieto-occipital area, and sensitiveness in the mastoid and pretragal regions Nothing seemed to induce the attacks and there was no salivation during the paroxysms

Because of injection and swelling of the posterior superior wall of the external auditory meatus, which was sensitive efforts were made to eradicate any foci of infection. Sinuses were opened and treated teeth were extracted, the sphenopalatine ganglion was injected with procaine hydrochloride and

From the Department of Surgery Stanford University School of Medicine.

1 Clark L P and Taylor A S True Tic Douloureux of the Sensory Filaments of the Facial Nerve Cure Effected by Physiologic Exstirpation of the Geniculate Ganglion J A M A. 53 2144 (Dec 25) 1909

2 Hunt, J Herpetic Inflammation of the Geniculate Ganglion J Nerv & Ment. Dis 34 73 1907

alcohol, trichloroethylene inhalations and galvanism were tried, and the left sympathetic chain at the seventh cervical and the first and second thoracic vertebrae was injected with procaine hydrochloride, but attacks continued even while the effects of the procaine were evident. Although there were never any herpetic lesions in the ear, or facial palsy, the diagnosis concurred in by the neurologists and others was geniculate ganglion neuralgia or geniculate tic douloureux.

During the first week in December the paroxysms came every one to three minutes. Sedatives gave little help and the patient begged for relief. With a case before me identical with that of Clark and Taylor's, I asked permission, if necessary, to cut the eighth and seventh nerves in an effort to identify and cut the pars intermedia of the seventh. The patient agreed to the operation under local anesthesia in order to aid in locating this sensory filament of the facial nerve.

**Operation.**—December 10, the unilateral cerebellar approach of Dandy<sup>3</sup> was performed under local anesthesia. The left eighth, ninth and tenth nerves were easily identified and lay separate from one another. The seventh and eighth nerves coursed together, the seventh lying anteriorly, being difficult to distinguish from the eighth. When this bundle of seventh and eighth nerve fibers was gently touched and moved, the patient stated that she felt pain in the auditory canal but it was not the tic pain. The ninth nerve was then touched which caused her to shriek and to exclaim that this produced the tic pain. Four times the seventh and eighth nerves were gently moved and each time she had pain in the auditory canal and four times the ninth nerve was gently moved and each time she shrieked because of a stabbing paroxysmal pain in the ear identical with that which had afflicted her for four months. The glossopharyngeal nerve was then cut and the patient fell asleep on the operating table.

**Postoperative Course.**—More than four months has elapsed since the operation and she has not felt any suggestion of the tic pain, nor has the pain in the face and occipital region returned. Anesthesia of the ear or its external canal could not be demonstrated after the operation. The patient located the pain that was produced when the seventh and eighth nerves were touched during the operation to the cartilaginous portion of the anterior wall of the external auditory meatus, and the tic pain, produced when the ninth nerve was touched was referred to the bony part of the anterior wall of the external auditory canal.

Sensation, as tested by Dr. E. C. Sewall, was lost over the left soft palate, over the pharyngeal wall from 2 cm. within the eustachian tube to the tip of the epiglottis and over the posterior third of the tongue, where taste was also absent. This distribution of sensory and gustatory loss was the same as that observed in three other cases of intracranial section of the ninth nerve for the ordinary glossopharyngeal tic douloureux,<sup>4</sup> and is in agreement with the observations of other operators such as Dandy,<sup>5</sup> Stookey<sup>6</sup> and Bailey,<sup>7</sup> and contrary to the observation of Fay,<sup>8</sup> who felt that this distribution of anesthesia followed section of the vagus.

Salivary secretions were simultaneously collected from the parotid and submaxillary glands and observed from the sublingual glands in this patient ten days and ten and thirteen weeks after operation. These measurements of salivary secretion in conjunction with those

obtained from two other cases sixteen months and two and a half years after intracranial division of the ninth nerve, and the results obtained in four patients in whom the chorda tympani had been avulsed just distal to the facial nerve, from three days to four months after carefully observed radical mastoidectomies, led Poth and me<sup>9</sup> to conclude that the secretory fibers of these glands accompany both the seventh and the ninth nerves. This is contrary to the accepted teachings, which state that the secretory fibers of the sublingual and submaxillary glands accompany the seventh only.

#### COMMENT

This case, in which a preoperative diagnosis of geniculate ganglion neuralgia had been made, was found at operation to have the tic-like pain consistently reproduced only when the glossopharyngeal nerve was touched. It was concluded, therefore, that the patient had a tic douloureux of the tympanic branch of the glossopharyngeus (Jacobson's nerve or plexus), and since her symptoms were identical with those of the patient of Clark and Taylor, their case undoubtedly was likewise a Jacobson's nerve neuralgia.

It is interesting to note that Clark and Taylor's patient for two hours on the twelfth postoperative day suffered severe pain in the ear, which closely resembled the pain before operation. Mills<sup>10</sup> and Kidd<sup>11</sup> felt that the cure secured by these authors did not prove Ramsay Hunt's contention of the existence in man of cutaneous sensory fibers of the seventh nerve, and Mills went so far as to suggest, apparently correctly, that "the effects of decompression in such cases should not be overlooked."

I am forced to conclude that there are at least two types of neuralgia or tic douloureux of the glossopharyngeal nerve. Over forty cases have been reported in the literature of the ordinary or complete glossopharyngeal neuralgia, which is characterized by paroxysmal attacks of lancinating pain, usually starting in the tonsillar region or base of the tongue and frequently radiating to the ear, often accompanied by salivation and induced by eating, talking or swallowing or by other movements of the pharynx and tongue.

Partial involvement of the glossopharyngeus or Jacobson's nerve tic douloureux is a rare neuralgia of the tympanic branch of the glossopharyngeal nerve which has been regarded in the literature as a tic of the sensory filaments of the seventh nerve and is more commonly termed geniculate ganglion neuralgia. It is characterized by paroxysms of stabbing pain in the external auditory meatus, often associated with other pains in the face and postauricular region, not induced by talking, eating or swallowing, and not associated with salivation.

#### SUMMARY

Primary tic douloureux of the ear was found at operation, performed under local anesthesia, to have been caused by a lesion of the tympanic nerve or plexus of Jacobson, and was cured by intracranial division of the glossopharyngeus.

The one case of a tic douloureux of this branch of the glossopharyngeal nerve, recorded in the literature as operated on, was diagnosed as a tic douloureux of the

3 Dandy, W. E. An Operation for the Cure of Tic Douloureux. Partial Section of the Sensory Root at the Pons. *Arch. Surg.* 18: 687 (Feb.) 1929.

4 Reichert, F. L. Three Cases of Glossopharyngeal Neuralgia Cured by Intracranial Section of the Nerve, *S. Clin. North America* 13: 193 (Feb.) 1933.

5 Dandy, W. E. Glossopharyngeal Neuralgia (Tic Douloureux). Its Diagnosis and Treatment. *Arch. Surg.* 15: 198 (Aug.) 1927.

6 Stookey, Byron. Glossopharyngeal Neuralgia. Surgical Treatment with Remarks on the Distribution of the Glossopharyngeal Nerve. *Arch. Neurol. & Psychiat.* 20: 702 (Oct.) 1928.

7 Bailey, Percival. Neuralgias of the Cranial Nerves. *S. Clin. North America* 11: 61 (Feb.) 1931.

8 Fay, Temple. Observations and Results from Intracranial Section of the Glossopharyngeus and Vagus Nerves in Man. *J. Neurol. & Psychopath.* 8: 110 (Oct.) 1927. Atypical Facial Neuralgia: A Syndrome of Vascular Pain. *Ann. Otol. Rhin. & Laryng.* 41: 1030 (Dec.) 1932.

9 Reichert, F. L. and Poth, E. J. Pathways for the Secretory Fibers of the Salivary Glands in Man, *Proc. Soc. Exper. Biol. & Med.* 30: April 1933.

10 Mills, C. A. The Sensory Functions Attributed to the Seventh Nerve. *J. Nerv. & Ment. Dis.* 37: 273-355 1910.

11 Kidd, L. J. The Alleged Sensory Cutaneous Zone of the Facial Nerve in Man. *Rev. Neurol. & Psychiat.* 12: 393 1914.

sensory filaments of the seventh nerve but was probably cured by the decompressive feature of the cerebellar operation rather than by the section of the seventh nerve

Partial or complete involvement of the branches of the glossopharyngeal nerve has led to the differentiation of at least two types of neuralgia of this nerve

The common or complete tic douloureux of the glossopharyngeus is characterized by paroxysms of lancinating pain starting in the tonsillar fossa or base of the tongue, generally radiating deeply in the ear, accompanied by salivation and induced by swallowing, talking or other movements of the throat and tongue

The partial or Jacobson's plexus tic douloureux of the glossopharyngeus is characterized by paroxysms of lancinating pain in and about the external auditory canal and is not induced by any movements of the pharynx or tongue and is not accompanied by salivation. This neuralgia has heretofore been considered as a geniculate ganglion neuralgia

Intracranial division of the glossopharyngeal nerve has cured both types of these neuralgias

Clay and Webster streets

## TRICHOMONAS VAGINITIS IN CHILDREN

LESTER E. FRANKENTHAL, JR., MD

AND

ALFRED J. KOBAK, MD

CHICAGO

The literature concerning *Trichomonas vaginalis* and its association with a definite syndrome of leukorrhea and vaginitis has become quite voluminous during the past decade. This type of vaginitis in recent years is frequently found in adults, both in private and in clinic patients. Whether this increase is actual or relative remains to be determined. Undoubtedly one is more alert in studying the vaginal secretions for these protozoa whenever their presence is suspected. Bland and his associates<sup>1</sup> have thoroughly reviewed the literature concerning *Trichomonas* in women. However, our own scrutiny of the literature has shown this type of vaginitis to be very rare in children. We have been unable to find a report detailing any author's personal experience with *trichomonas vaginitis* in children. In fact, Kleegman<sup>2</sup> in 1930 makes the following assertion: "The organism has never been found before the onset of menstruation, but is frequently found during pregnancy and after menopause." In 1931, the article of Cornell and his associates<sup>3</sup> makes brief mention of H. W. Hottenstein of Akron, Ohio, who had a 3 year old patient in whom a *trichomonas vaginitis* was found. In 1932, we<sup>4</sup> published a brief communication of what appears to have been the first authentic case report of *trichomonas vaginitis* before the onset of menstruation.

From the Children's Vaginitis Clinic of the Mandel Out Patient Clinic of the Michael Reese Hospital

1 Bland P. B. Goldstein Leopold and Wenrich D. H. Vaginal Trichomoniasis in the Pregnant Woman. *J. A. M. A.* 98: 157 (Jan. 17) 1931

2 Kleegman S. J. Trichomonas Vaginalis Vaginitis. A Common Cause of Leukorrhea. *Surg. Gynec. & Obst.* 51: 552 (Oct.) 1930

3 Cornell E. L. Goodman L. J. and Matthes M. M. The Culture, Incidence and Treatment of Trichomonas Vaginalis. *Am. J. Obst. & Gynec.* 22: 360 (Sept.) 1931

4 Frankenthal L. E. Jr and Kobak, A. J. Trichomonas Vaginalis Occurring Before Menstruation. *Am. J. Obst. & Gynec.* 23: 450 (March) 1932

The organism was first described in 1837 by Donne<sup>5</sup> and in 1896 Dock<sup>6</sup> was the first to report it in the United States. It belongs to a group of flagellates that are closely related morphologically. It is demonstrable in the mouth, the intestine and the urinary tract, as well as in the vagina. Lynch,<sup>7</sup> in 1915, considered the organisms found in the mouth and vagina to be identical. Hegner<sup>8</sup> has been able experimentally to transmit the trichomonads in monkeys from the intestine to the vagina and believes that a similar route may be the etiology of vaginal infections in man. Andrews,<sup>9</sup> however, has ascertained that prolonged culturing of *Trichomonas vaginalis* changes it so as to resemble *Trichomonas hominis* (the gastro-intestinal type). Bland<sup>1</sup> states, however, that these results must yet be checked by further investigation. These organisms, when found in the intestinal tract of children, are reported to be definitely pathogenic and give rise to a dysenteric syndrome.<sup>10</sup> The flagellates are described by Hegner and Toliaferro<sup>11</sup> as being from 12 to 26 microns in length and from 6 to 18 microns in width. They vary greatly in size and are accepted to have four flagella and an undulating membrane on one side. They are readily detected on a fresh warm slide of the material, which has been diluted with physiologic solution of sodium chloride, and are easily visualized with a high power dry objective among clumps of pus cells, usually clinging to them and distinguishable from the latter only by their vigorous motions.

At the present time there are many who are uncertain as to the exact pathogenic category into which to place this organism. Whether it is the sole causative factor or one of association is a question. Still others are of the opinion that it is a harmless saprophytic agent. It is not within the province of this report to take any part or to offer any theory as to what role this organism plays in the production of a vaginitis. We are, however, of the opinion that a characteristic type of vaginitis is invariably associated with its presence and that a clinical cure seems to follow when the therapy has succeeded in eliminating these flagellates.

There is still much to learn concerning this organism. Only recently, Stein and Cope<sup>12</sup> and Davis<sup>13</sup> have improved the methods for obtaining cultures. These authors, as well as others, are still unable to obtain a pure culture of *Trichomonas vaginalis*. No doubt when this is done and their life cycle determined, together with more exact data as to their habitats, one may hope for a more uniform and precise type of therapy.

Regarding the treatment for adults, much may be said, but most of it in a negative way. The various therapeutic agents sponsored by different authors are

5 Donne M. A. Recherches microscopiques sur la nature du mucus. *Paris* 1837

6 Dock, George. Trichomonas as a Parasite of Man. *Am. J. M. Sc.* 112: 1 1896

7 Lynch K. M. Trichomoniasis of the Vagina and Mouth. Cultivation of the Causal Organism and Experimental Infection. *Am. J. Trop. Dis. & Prev. Med.* 2: 627 1915

8 Hegner R. W. Experimental Transmission of Trichomonads from the Intestine and Vagina of Monkeys to the Vagina of Monkeys (Macacus Rhesus). *J. Parasitol.* 14: 261 (June) 1928

9 Andrews M. N. Observations on Trichomonas Vaginalis. Donne's 1837 with Particular Reference to Its Incidence in England and Its Cultivation. *J. Trop. Med.* 32: 237 (Aug. 22) 1929

10 Gourevitch, D. Zur Frage der Pathogenität der Lamblien und Trichomonas bei Kindern und der Therapie mit Myosalvarsan. *Arch. f. Schiffs. u. Tropen Hyg.* 35: 26 (Jan.) 1931. Ishida I. Trichomoniasis. Case in an Infant, Orient. *J. Dis. Infants* 4: 5 (Sept.) 1928.

11 Hegner R. W. and Toliaferro W. H. Human Protozoology. New York Macmillan Company 1924 pp 221-223

12 Stein I. F. and Cope, E. J. Trichomonas Vaginalis. (Donne), Preliminary Study. *Am. J. Obst. & Gynec.* 22: 368 (Sept.) 1931

13 Davis C. H. and Colwell Charlotte. Trichomonas Vaginalis. Donne's Preliminary Report on Experimental and Clinical Study. *J. A. M. A.* 92: 306 (Jan. 26) 1929

too many to enumerate Greenhill,<sup>14</sup> among others, has advocated "scrubs" with liniment of soft soap (tincture of green soap) followed by drying as a basis for treatments. For lack of anything more satisfactory, and because it does succeed in improving the patient and even giving a lasting cure in some cases, we have accepted this form of therapy. We might say, however, that while the majority of women are almost immediately benefited, some will persist in showing trichomonads over a long period, in spite of the therapy.

In the outpatient clinic of the Michael Reese Hospital during the past two years, four cases of trichomonas vaginitis in children were detected. All the patients were between the ages of 11 and 14 years. Three of these cases were seen before the onset of menstruation. In each patient a history of profuse, irritating vaginal discharge was elicited. On examination, we found in all four a bubbly, foamy, gray to green discharge which bathed the external genitals and irritated the surrounding skin. Vaginoscopic examination showed the vagina to be definitely affected, and the summits of the rugae contained small punctate hyperemic spots. The latter were especially noted around the cervix.

#### REPORT OF CASES

**CASE 1—M S.**, a girl, aged 10 years 11 months, was admitted to the Vaginitis Clinic, Feb 20, 1931 complaining of a vaginal discharge of over a year's duration. She appeared pale and underweight. Examination showed the external genitalia to be bathed in a foamy, grayish, purulent discharge with irritation of the adjacent skin. The vagina as seen through the infant vaginoscope appeared reddened, and the tips of the rugae in the vicinity of the cervix contained punctate injected spots. Direct examination of the discharge revealed numerous motile flagellates among clumps of leukocytes. The gram stain was negative for gonococci in several examinations. Cultures on Sabouraud's medium were negative for yeasts. The blood examination showed 78 Sahli units of hemoglobin and 10,200 white cells, the differential count was normal. The routine urinalysis revealed trichomonads which proved to be a vaginal contamination. Vaginal cultures were positive for the presence of flagellates, but the fresh stool cultures were negative (method of Stein and Cope).

Owing to the age of the patient and the presence of an intact hymen, the usual vigorous treatment given to adults could not be undertaken. For the first month the patient received weekly applications of silver nitrate with daily instillations of 2 per cent mercurochrome. During the next four weeks, mercurochrome was supplanted first by astringent douches and then by potassium permanganate 1:5000. Hoping to obtain some of the success noted in the adults, we tried liniment of soft soap "scrubs" and vigorous drying, using a gauze cloth on the common applicator stick. The discharge gradually decreased, and while the trichomonads frequently, periodically, disappeared from the secretions, they would reappear. The patient's attendance at the clinic was irregular and there was no satisfactory cooperation in the home therapy.

**CASE 2—H S.**, a girl (a sister of patient 1), aged 14 years 7 months, undernourished and pale, had been ailing since an attack of double pneumonia with secondary meningeal involvement. Her basal metabolism ranged from minus 25 to minus 34, and she was subject to attacks of petit mal. She was first seen in the Vaginitis Clinic, May 1, 1931, when the following observations were made. A frothy mucoid vaginal discharge contained numerous trichomonads among clumps of pus cells, the skin surrounding the vulvar orifice was slightly irritated and bathed by this mucous discharge, the vagina contained a few punctate injected areas while the cervix was normal. A blood study showed that the Kahn and Wassermann tests were negative, the hemoglobin 78 Sahli units, the red cells 4,330,000 and the white cells 9,750. The differential

count was normal. The urine and stool cultures were negative for trichomonads. Cultures of the vaginal secretions were positive for *Trichomonas vaginalis* but negative for yeast. The patient had had only one menstrual period, six months before the treatments were begun, and then her menses gradually became cyclic. Her personal hygiene was very poor. The clinic treatment consisted in liniment of soft soap "scrubs" and drying. Daily irrigations of 1:5000 potassium permanganate were prescribed for home treatment, which were to be given even on the days she menstruated. However, as in the first cited case, a lack of cooperation in clinic attendance and home treatments was associated with slow progress in a year of therapy. The patient is, however, now improved but not entirely cured of and free from trichomonads.

**CASE 3—R B.**, a girl aged 12 years 7 months, pale and undernourished with irregular cervical gland scars on the left side of the neck, was referred from the pediatric group because of spastic colon, backache and vaginal discharge. Her menses did not begin until nine months after the diagnosis, which was made in the Vaginitis Clinic, June 12, 1931. The following observations were made at that time. A bubbly, vaginal discharge which irritated the external genitals was present, the labia were covered with smegma, the hymen was ruptured, and the vagina and cervix were hyperemic and contained punctate injected spots. The vaginal secretions revealed motile trichomonads among many clumps of white cells. The hemoglobin was 67 Sahli units, the red blood count was 4,350,000, the white blood count, 6,800. The differential count showed 64 per cent polymorphonuclear leukocytes and 36 lymphocytes. Urinalysis was negative. The treatment in this case, because of the ruptured hymen, permitted more liberty in the vigor of the liniment of soft soap "scrubs" and exposure of the vaginal mucosa for gauze drying. Silver nitrate, 5 per cent, was applied to the vaginal mucosa and glycerin tamponades were used. At home the mother was instructed to irrigate the vagina with potassium permanganate 1:5000, daily. However, her visits were irregular and the mother was indifferent in her cooperation. After one year of poor attendance, attributed to conflict with her school work, a renewed effort was made for more regular treatment during her summer vacation. Metaphen in oil, 1:1,000 was then substituted for glycerin tamponades. Definite clinical improvement was noted in her subsequent visits, and her discharge seems to be almost cleared up, but trichomonads are still present, though in fewer numbers.

**CASE 4—B C.**, a girl, aged 11 years, well developed with a previous history of vaginal discharge during infancy, complete data of which were lacking was first seen in the Vaginitis Clinic, April 1, 1932, and the following observations were made. A moderate frothy vaginal discharge, which bathed the irritated external genitals, was present, the vagina and cervix contained injected punctate spots and were immersed in this bubbly discharge and the wet spread examination of the vaginal secretions showed many trichomonads and pus cells. Blood examination showed hemoglobin 75 Sahli units, a count of 4,340,000 red cells, and 9,900 white cells, the differential count showing polymorphonuclears, 55 per cent, lymphocytes 40 per cent, and eosinophils 5 per cent. Urinalysis was negative. Local internal treatment was not used in this case. The mother however, was instructed to cleanse the external genitals with a bland soap on a soft cloth and to administer ergosterol daily. Rapid improvement was then noted, the condition progressively cleared up, and in seven weeks the hanging drop was negative for trichomonads. Since then she has had little or no discharge, and the vaginoscopic examination has showed progressive improvement in the vagina and cervix. On two subsequent visits there was a recurrence of the trichomonads, but in very small numbers. Her condition at the present time is very satisfactory.

#### COMMENT

The diagnosis of trichomonas vaginitis is easy to make. Whenever a case of vaginitis presents a bubbly or foamy leukorrhea, the possibility of trichomonads being present should be foremost in mind. The diagnosis is easily confirmed by examining a drop of

<sup>14</sup> Greenhill J. P. Vaginal Discharge Due to *Trichomonas vaginalis*, *Am J Obst. & Gynec.* 16: 870 (Dec.) 1928.

the secretion diluted with warm physiologic solution of sodium chloride under high dry power. Vigorous motile flagellates are seen isolated or among clumps of white cells. They vary in size, shape and degree of motility.

It is surprising that, with many juvenile vaginitis clinics, *Trichomonas vaginalis* infections should be so rarely reported in the literature. Only one other case of this type of vaginitis has come to our attention, but not directly from the physician who treated the girl. It seems that the popular concept of childhood vaginitis is so much associated in the minds of physicians with gonorrhea and nongonorrheal bacterial infections as the underlying etiologic basis that it is only for these organisms that the physician looks. With the clinical picture of trichomonas vaginitis in mind, one may readily confirm a suspicion of its presence. With this thought, every well organized vaginitis clinic should always have a microscope handy, as part of its equipment, and accessible for use. In this way, we believe that more of these cases during childhood will be brought to light.

Retrospection of the four cases presented shows that certain conditions were common to all. The character of the discharge and the peculiarity of the appearance of the vaginal mucosa when examined with the electrical vaginoscope were constant. The ages of our patients were rather close, ranging from 11 to 14 years. Three of them had not menstruated, and one had had only one period before the diagnosis was made. From Jan 1, 1931, to Sept 1, 1932, our vaginitis clinic admitted for treatment sixty-one new patients, ranging in age from infancy to 14 years. It is striking that the four patients with trichomonas infections should have been in the puberal age. The degree in which puberty may play a part is uncertain, but it is accepted that certain constitutional and local changes take place, which may in some way be contributing factors.

Patients 1 and 2 are sisters. It was likewise noted that their mother also harbored trichomonads in the vagina. Here the question of contact arises as a source of this infection. That contact may play a part in other forms of childhood vaginitis is conceded by many. Regarding its dissemination through male contact, Riba and Perry<sup>15</sup> have shown this organism to be found also in the prostatic secretions. Capek<sup>16</sup> reports the presence of trichomonads in a man with nongonorrheal urethritis whose wife harbored them in the vagina, cervix and urethra. While it remains for some zealous investigator to establish the contagiousness of this disease by Koch's postulates, there is a definite suspicion that contact dissemination may play a role in some way. We believe in advising regulations similar to those imposed in venereal infections, viz, sleeping isolation, care in the usage of the toilet and towel, bathing and the like.

Another common factor is the questionable hygiene of our patients and their pale and undernourished appearances, which might have contributed in a degree to the lowering of their resistance. Sharman,<sup>17</sup> in his paper on leukorrhea in virgins, considered this to be a factor in nongonorrheal vaginitis and possibly in trichomonas. He gave viosterol, which seemed to be beneficial in many of his cases. We have always aimed to improve the poor hygiene of our patients through our

social service bureau and have prescribed vitamin D for them and advised a well balanced diet.

The local treatment was, however, very difficult. The presence of the small introitus and a narrow hymenal ring made the usual treatment accorded to adults hardly possible. In addition, the cooperation on the part of the patients' clinic attendance and the home treatment in three of our patients was very poor, despite our social service follow up. The course of the vaginitis in the first three cases cited was prolonged. It has been our observation, in nongonorrheal forms of vaginitis, that withholding the local treatment together with improvement of the patient's local and general hygiene has been productive of better results. Therefore, in case 4, liniment of soft soap "scrubs" and vaginal irrigations were dispensed with. For this patient, ergosterol was prescribed, and her mother was urged to keep the patient's external genitals in a good state of hygiene by daily cleansing of the labial folds with a bland soap on a soft cloth. Her progress was more rapid and favorable than the others. Whether this form of treatment is best remains to be determined in a study of more cases. It is hoped that with this report more cases of childhood vaginitis will be inquired into for the possible association of *Trichomonas vaginalis*, and that a more rational and successful therapy will be forthcoming.

#### SUMMARY

1 Four cases of *Trichomonas vaginitis* during or before puberty, selected from a large group of children of all ages, occurred during puberty, this period of life was therefore considered as a possible contributing factor. Three of our patients were prepubescent and the other had had only one menstrual period prior to her admission.

2 The diagnosis of this condition is easy to make. Routine vaginoscopic and hanging drop examinations should be made in all suspected cases.

3 The local treatment in children is very difficult and unsatisfactory because of the virginal introitus and infantile state of the genitals.

4 Improvement of local and general hygiene together with a well balanced diet is very beneficial. The one patient limited to these measures made the most satisfactory progress.

5 The course of this infection is prolonged in childhood and it is more difficult to effect a cure than in adults.

104 South Michigan Avenue—30 North Michigan Avenue.

**The Case of the Medium Margery**—Disclosures said to present evidence of fraud in the production of certain spiritistic phenomena in the case of Margery, the Boston medium are reviewed in the May issue of the *Scientific American*. Since 1926 the most prominent phenomenon in Margery's manifestations has been the production of thumb prints by a ghostly hand, which Margery and her supporters claimed belonged to a spirit named Walter. In March, 1932, E. E. Dudley, an investigator, is said to have discovered that the prints which for six years were produced as those of the spirit 'Walter' were actually those of a living Boston dentist. It is said that the dentist signed a set of his own prints and acknowledged before witnesses that he gave them to Dudley. Walter Franklin Prince, author of the article in the *Scientific American*, is research officer of the Boston Society for Psychic Research. He says that common sense measures for proof of the phenomena have been repeatedly refused by the medium. The writer considers that the "ectoplasmic" hand has been proved to be of flesh and blood manipulated under draperies, and that this exposure throws doubt on all of the medium's claims thus demolishing the entire case.

<sup>15</sup> Riba L. W. and Perry Eugene. *Trichomonas Prostatovesiculitis*, *J. Urol.* 22: 563 (Nov.) 1929.

<sup>16</sup> Capek, Alfred. *Die Flagellaten Urethritis des Mannes*. *Med. Klin.* 23: 1535 (Oct. 7) 1927.

<sup>17</sup> Sharman, Albert. *Leukorrhea in the Virgin*. *J. Obst. & Gynaec. Brit. Emp.* 37: 483. 1930.

THE DIATHERMY TREATMENT OF  
DEMENTIA PARALYTICA

## MICROSCOPIC CHANGES IN TREATED CASES

WALTER FREEMAN MD PHD

THEODORE C FONG, MD

AND

S J ROSENBERG, MD

WASHINGTON D C

The disadvantages of malaria in the treatment of dementia paralytica are manifold. The strain is difficult to keep going outside of large clinics, the fever is uncontrollable, immunity often develops so quickly that a full course of fever is impossible, and serious complications or even death may result from the induced disease. The prospect of being able to secure equal results with greater control and less danger is therefore engaging, and with this in mind, artificial fever provoked by diathermy has been introduced into a number of clinics, and almost universally favorable results have been reported. From a survey of the literature, table 1 has been constructed.

We have been unable to reproduce these results. Diathermy was introduced at St Elizabeth's Hospital in August, 1928, and has been used in fifty cases, the experiment being concluded in June, 1932. Forty of

The treatment of the others was interrupted by complications after from one to nine periods.

The application of the treatment was marked by considerable difficulties. Some of the patients became very restless during the period of rising temperature, and two instances of rather extensive second degree burns followed consequent shifting of the electrodes. During the period of high fever later on the patients became quiet and not infrequently developed muscular twitchings and in some instances actual convulsive seizures. There was marked prostration after most of the treatments with listlessness and inability to take food. Convulsive seizures were observed to be much more

TABLE 2—Results of Diathermy Treatment in Fifty Cases

Clinical Type	Improved*	Unimproved	Died
Agitated	2	5	1
Depressed	8	1	2
Demented	0	20	11
Total	10	26	14

\* Four of the ten patients reported as improved were progressing favorably under tryparsamide at the time diathermy treatment was administered and two have received malaria treatment with three and twenty two paroxysms respectively.

frequent in the diathermy cases than they were in the corresponding malaria cases. Moreover, while it was common in malaria cases to observe noticeable improvement from one paroxysm to the next, with abating confusion and better cooperation, such a phenomenon was not witnessed in any of the diathermy cases. Indeed, patient 4 showed quite the opposite. He was in such good condition before the diathermy that ground parole was considered but even during the course of diathermy his condition changed and the nurses' notes indicated that he was becoming more confused and restless. Later he deteriorated with unusual rapidity in spite of arsenical therapy, dying in eight months.

In many cases, some benefit resulted from preliminary antisyphilitic therapy, and following diathermy this benefit was maintained, but only by the continuous use of tryparsamide. When the drug was omitted, prompt relapse ensued. This is another finding at odds with the malaria cases. In several scores of control cases no therapy was given following malaria, yet improvement was usually maintained and sometimes continued progressively after subsidence of the induced disease.

Facilities for treatment were such that only four patients could be handled during a period of three weeks, and patients with dementia paralytica were being admitted considerably faster than that. In contrast, we have frequently seen a ten bed ward filled to capacity with patients, all of them in the acme of fever, quiet, with one nurse and an attendant able to care for the lot. Had the results warranted it, additional facilities for diathermy could have been made available, but the treatment was finally abandoned in 1932, not on account of technical limitations but because of poor results.

In explaining the poor results we are inclined to absolve the machines and the technic. Milliamperage was adequate and the fever was as high as safety permitted. If the febrile conditions of the malaria could be duplicated artificially, they were complied with in the handling of the cases. The patients were not of the most favorable type. Eighty per cent of our patients were Negroes, and neurosyphilis in the colored race is possibly more malignant than in the white race. While only a few patients were markedly deteriorated, most

TABLE 1—Results of Diathermy in Treatment of Dementia Paralytica as Reported in the Literature

Authors	Cases	Remissions	Improved	Unimproved	Deaths
King and Cooke South M J 23:222 (March) 1930	12	2	6	3	1
Neymann and Osborne J A M A 96:7 (Jan 3) 1931	25	16	2	7	0
Neymann and Koenig J A M A 96:1858 (May 30) 1931	50	12	13	25	0
Willig and Lurie Illinois M J 60:341 (Oct) 1931	97	13	50	20	5
Perkins Am Med 26:546 (Sept) 1931	20	13	10	1	2
Prior M J Australia 1 882 (June 25) 1932	10	0	3	4	0
Schiff Misset and Trelles Ann med psychol 90:412 (April) 1932	2	1	0	1	0
McKay Gray and Winans Am J Psychiat 12:531 (Nov) 1932	28	3	15	7	3
Halphen and Auclair Rev dactinol 8:154 (March April) 1932	15	4	4	7	0
Bishop Horton and Warren Am J M Sc 184:515 (Oct) 1932	18	13	0	3	2
Bamford Lancet 2 337 (Aug 13) 1932	13	1	0	9	3
Cortesi Ann di neurol 45:11 (Jan March) 1931	8	3	3	2	0
Graham J Ment Sc 70:89 (Jan) 1933	23	12	2	3	6
Schamberg and Butterworth Am J Syph 16:519 (Oct) 1932	0	3	3	3	0
Pacheco e Silva Passos Fajardo and Marques de Carvalho Bol Soc de med e cir 15:413 (Dec) 1931 (Jan) 1932	5	1	1	3	0
Totals	347	106	121	98	22
Percentages	100	30.5	34.8	28.3	6.3
Freeman Fong and Rosenberg (cases)	50	0	10	26	14
(percentages)	100	0	20	52	28

the patients were Negroes who had been unsuccessfully inoculated with malaria, and ten were white males, seven of whom had received a course of malaria without much benefit. Almost all the patients had been treated previously with specifics, and twenty of them received tryparsamide and bismuth salicylate afterward. In forty-four cases a full series of diathermy treatments was administered, the temperature being raised to 104 plus during a period of from two to five hours.

From St Elizabeth's Hospital  
Read before the American Neurological Association May 11 1933

were of the dementing type of dementia paralytica that makes a poor showing with any form of treatment

The results of diathermy treatment in the fifty cases are presented in table 2. Two of the deaths resulted from thermic fever that could not be controlled, and another from convulsive seizures shortly following the first period of treatment. The other eleven patients lived from two to thirty months, dying usually of the cerebral disease with terminal bronchopneumonia or status epilepticus, very much in the manner of the ordinary untreated case of dementia paralytica. Few of them, however, reached the stage of cachexia. This,

TABLE 3—Serologic Results Following Diathermy\*

	Normal	Improved	Unchanged
Wassermann reaction	26%	14%	60%
Spinal Wassermann reaction	3%	13%	74%
Cell count	100%	0	0
Globulin	22%	58%	20%
Colloidal gold	5%	42%	53%

\* Twenty seven cases one year or more following diathermy

again, is a feature of unfavorable comparison with the results observed in malaria. While malaria fails to arrest the process of dementia paralytica all too frequently, the patients are apt to die of some intercurrent disease, hepatic, vascular, infectious, and less than half of those succumbing later present dementia paralytica as the outstanding cause of death.

The serologic results in patients treated by diathermy were quite encouraging in the earlier phases, but relapses occurred in a large proportion of cases. A year ago we estimated a 20 per cent improvement, but at the present time the proportion maintaining improvement has been reduced to 8 per cent. The results of this study are given in table 3.

#### PATHOLOGIC CHANGES

In the reports in the literature up to the present time we have found no mention of the pathologic changes in the cases of dementia paralytica treated by dia-

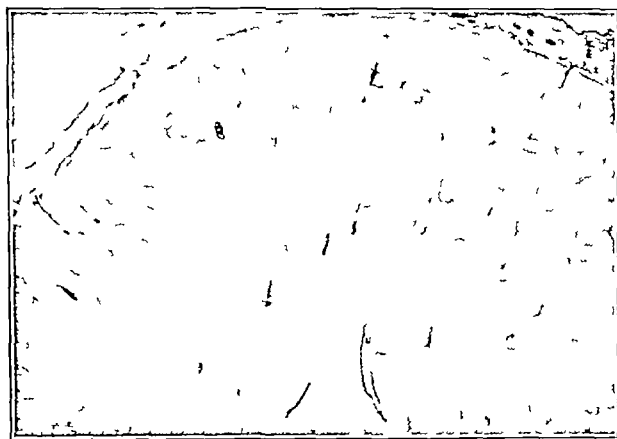


Fig. 1 (case 1)—Cerebral cortex, showing pronounced perivascular infiltrations and some disorder in the cortical architecture.

thermy. These represent an important control feature and have been one of the chief bulwarks of the malaria treatment. In a majority of cases, malaria brings about a demonstrable arrest of the inflammatory and degenerative processes that are going on in the brain. We are able to report on the postmortem examination of nine cases treated by diathermy. One of the patients died during the administration of diathermy, and a

second patient five months after a single treatment interrupted by convulsive seizures. These are therefore not well suited for the purpose of ascertaining any possible arrest. Nevertheless, the indications of extrusion of the infiltrating cells along the vascular sheaths into the meninges, and of organization of the perivascular exudate as described in previous contributions

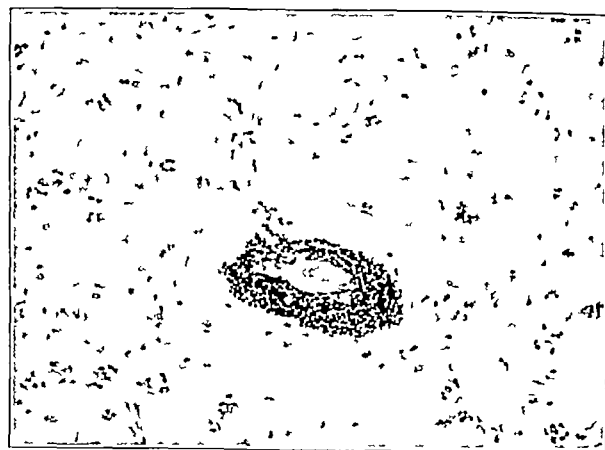


Fig. 2 (case 1)—Large cuff of plasma cells about small vein in caudate nucleus.

regarding the immediate effects of induced malaria,<sup>1</sup> are lacking in these two diathermy cases. They present merely the usual appearances of the brain in dementia paralytica.

In six cases<sup>2</sup> death resulted in from three to ten months following diathermy, and the clinical features and pathologic changes are given in abstract.

#### REPORT OF CASES

CASE 1—M. W., a Negro, aged 46, was admitted, Dec. 5, 1928, and died, Aug. 14, 1930. The psychosis began in December, 1927, with hypochondriacal complaints but did not become severe until the summer of 1928, at which time there were confusion, disorientation and euphoria. The pupils were inactive to light and the knee and ankle jerks were absent. The serologic examination gave results typical of dementia paralytica. Before the diathermy treatment he received 29 Gm of trypanamide and 3 Gm of bismuth salicylate. He was in good condition and received ground parole following this. In September, 1928, he ran away and returned in April, 1930, much the worse for wear. He then received ten diathermy treatments, the temperature averaging 104.4. Subsequently however, he showed rapid deterioration both physically and mentally, and four days before death developed intractable convulsions with terminal hypostatic pneumonia. The duration after diathermy was four months.

Necropsy revealed atrophy of the cerebral cortex with disordered lamination and polarity, and rather marked gliosis with abundant perivascular round cell infiltration and extensive new vessel formation (fig. 1). In addition to the alterations in the cerebral cortex there were unusually severe perivascular infiltrations in the basal ganglia (fig. 2) and some compact nodules with apparent vascular occlusion that were rather reminiscent of miliary gummas. It seemed, indeed, that the

1 (a) Freeman, Walter. Malaria Treatment of General Paralysis. Histopathologic Observations in Fifteen Cases. J. A. M. A. 88: 1064 (April 2) 1927. (b) Malaria Treatment of Paresis. Extracerebral Pathology and Its Bearing on the Modus Operandi. Am. J. Syph. 14: 326 (July) 1930.

2 On the day this paper was presented another diathermy patient died thirty months after treatment. Admitted in December, 1928, with typical clinical and laboratory observations, she did well under trypanamide and bismuth therapy, even being allowed short visits. Following diathermy in November, 1930, she was maintained in the same condition until March, 1932, when deterioration recommenced and convulsive seizures occurred. Necropsy disclosed extreme cerebral atrophy with characteristic meningeal and ependymal changes and a positive Spatz reaction.

inflammatory manifestations were more marked in this case than in the average untreated patient.

CASE 2.—J W, a Negro, aged 32, was admitted, Feb 8, 1930, and died, Dec. 10, 1930. He was an employee of the hospital and neurologic observations were picked up before the psychosis developed. In December, 1929, he became excited and confused and tried to harm himself. The pupils were unequal and irregular and were inactive to light, there were perioral tremors and slurring speech, and the knee jerks were absent. The serologic examination gave results characteristic of dementia paralytica. Neither before nor afterward did he receive any antisyphilitic treatment, and malaria inoculation failed. Ten diathermy treatments were given, the rectal temperature averaging 104.8. For a few weeks the patient was in good condition and enjoyed parole. In June, 1930, however, convulsions developed, they were repeated in series in September and October, and he died with bronchopneumonia. The duration after diathermy was nine months.

Necropsy disclosed relatively slight inflammatory infiltrations in the cerebral cortex, but more extensive ones in the basal ganglions and thalamus. Vascular proliferation was a pronounced feature and the number of rod cells was definitely increased.

CASE 3.—S A, a Negro, aged 31, was admitted March 31, 1929, and died, Aug 1, 1932. The syphilitic infection was established at the age of 20 years, he drank to excess and took drugs, and was admitted from Fort Leavenworth. The psychosis began acutely three days after his sentence began, with confusion, irritability and visions of women in his cell at night. The pupils were sluggish and there were tremors about the mouth with slurring of speech. The patellar and achilles reflexes were diminished the others were increased. The serologic examination gave results characteristic of dementia paralytica. He received 58 Gm of tryparsamide and 285 Gm of bismuth salicylate and a malaria inoculation but had no chills. The spinal fluid improved under chemotherapy but the clinical condition did not. In September 1931, he received ten diathermy treatments without complications. Still there was no clinical improvement and convulsions developed July 28, 1932. Death was associated with the development of bronchopneumonia. The duration after diathermy was ten months.

Necropsy showed some thickening, fibrosis and inflammatory infiltrations in the meninges, with marked disorder in cortical



Fig 3 (case 3)—Extensive perivascular infiltrations in cerebral cortex together with vascular proliferation, gliosis and meningeal thickening.

lamination, and severe gliosis. The inflammatory infiltrations about the vessels were considerably more marked than those of the average untreated case of dementia paralytica (fig 3). Rod cells were especially abundant, and examples of neuronophagia were quite frequently observed. Especially notable was the severity of involvement of the optic tectum. Not only was the aqueduct more than half closed by glia proliferation, but the perivascular infiltrations in the central gray matter and in the colliculi were unusually intense (fig 4). The Purkinje

cells of the cerebellum showed more or less complete degeneration and vacuolization. The Spatz reaction for waste iron was positive.

CASE 4.—A C, a Negro, aged 31, who was admitted Nov 11, 1930, and who died, Sept 20, 1932, was picked up by the police after a drinking bout, with some stolen property in his possession. He was euphoric and had grandiose delusions, admitted auditory hallucinations, and showed defects in judgment.



Fig 4 (case 3)—Partial closure of aqueduct by ependymitis with marked inflammation in the tectum mesencephali.

Memory and orientation were preserved. There were coarse tremors of the mouth and hands, with exaggerated reflexes. The pupils reacted fairly well to light and in accommodation. The serologic examination gave strongly positive results. He received two unsuccessful inoculations with malaria, 17 Gm of tryparsamide and 28 Gm of bismuth salicylate. During the latter part of 1931 he was in very good mental and physical condition and ground parole was permitted. In January, 1932, he received ten diathermy treatments, said he felt worse afterward, and rather rapidly developed irritability and confusion, became depressed, attempted suicide and finally refused to keep his clothes on. His face and ankles became edematous and his temperature fell below the registration point. He was so restless and uncooperative that he could not be handled, and died, apparently, of hypothermia. The duration after diathermy was eight months.

Necropsy disclosed acute duodenal ulcers and syphilitic aortitis. The brain was the seat of marked inflammatory and degenerative manifestations of dementia paralytica, with broad collars of cells around the vessels and hordes of rod cells (fig 5). In the lamina pyramidalis of the hippocampus Hergta preparations showed the processes of round cells more or less completely enveloping the shadowy outlines of ganglion cells (fig 6). The Spatz reaction was positive.

CASE 5.—R. L., a Negro, aged 53, who was admitted, Feb 18, 1932 and who died, Jan 28, 1933, was arrested for patrolling one of the government buildings under the belief that President Hoover had ordered him to kill the foreigners. He was expansive, loquacious and overactive and he talked in a rambling, incoherent manner. Neurologic examination disclosed characteristic disorders of the pupils, speech and reflexes, and the serologic examination gave positive results. The urine contained sugar. He assaulted a patient and received a black eye. His only treatment other than diathermy was 13 Gm of bismuth salicylate. He received ten diathermy treatments soon after admission but showed no improvement remaining disturbed and assaultive. June 2, 1932, he had a convulsion following which he was confused and noisy, quieting down gradually to his former state and the convulsions recommenced, December 3. He had lost greatly in physical strength although his diabetes was inactive, the blood sugar being normal. He remained in bed until another episode of convulsive seizures ended with bronchopneumonia. The duration after diathermy was ten months.

Necropsy revealed marked inflammatory infiltrations in certain parts of the cerebral cortex, with atrophic processes in others. The perivascular infiltrations were even more prominent in the basal ganglions and midbrain.

CASE 6—J T, a Negro, aged 34, who was admitted April 12, 1928 and who died, April 15, 1932, was exceedingly restless and uncooperative on admission. His trouble had begun with slur-

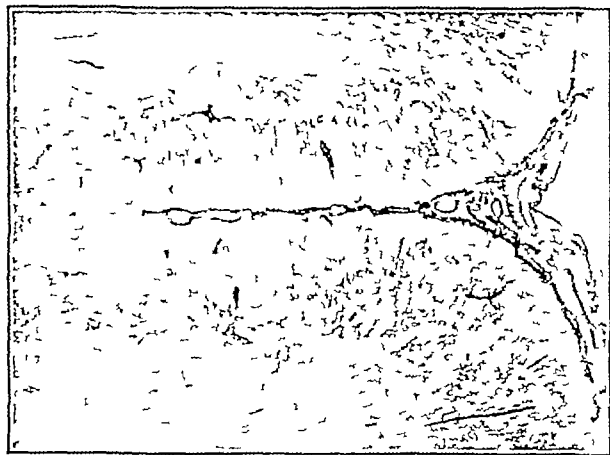


Fig 5 (case 4)—Cortical atrophy and condensation with meningeal and perivascular inflammation. This represents more marked inflammatory changes than are observed in the average untreated case of dementia paralytica.

ring speech and trembling hands in 1926, but not until November, 1927, did he have a definite break, at which time he had a fainting attack followed by loss of the power of speech. The pupils were large and irregular and reacted slightly to light, there were marked tremors about the mouth and speech was unintelligible. The tendon reflexes were markedly exaggerated and there was swaying in the Romberg position. The serologic examination gave results typical of dementia paralytica. He was given 112 Gm of tryparsamide and 416 Gm of bismuth salicylate, and was inoculated with malaria on two occasions without result. In December 1931, he received ten diathermy treatments but he remained much dilapidated. His finger became infected. He chewed the dressings and swallowed the medicaments; this set up an extensive cellulitis with septicemia from which he died. The duration after diathermy was three months.

Necropsy disclosed very marked atrophy of the brain, with an abundance of cerebrospinal fluid. There was an infarct in the left supramarginal gyrus with thrombosis of an arterial branch in the sylvian fissure. Histologically there was persistent inflammation of marked degree with an enormous number of hypertrophied microglia cells.

#### CASES IN WHICH IMPROVEMENT WAS OBSERVED

We are a little hesitant yet to pronounce the improved cases arrested. Among the ten so listed, only four cases may be thus considered following diathermy alone, since six patients had received, in addition, bismuth compounds and tryparsamide and two of these had previously had malaria, one a full series of twenty-two paroxysms. This patient had recovered sufficiently to be discharged as having effected a social recovery following malaria but was later readmitted on account of seizures. These two patients were slightly improved following the subsequent diathermy. Finally, in the four cases not already more or less under control with malaria and antisiphilitic therapy, tryparsamide was given after the diathermy treatment. An additional sixteen patients received tryparsamide and bismuth compounds after diathermy without manifesting any particular improvement. It was noted in more than

one of these cases that the condition remained fairly stationary as long as the drug was given but that prompt relapse followed its omission, even if only for a short period. The total sustained improvement attributable to diathermy alone therefore sinks to zero. Six treated patients were discharged from the hospital as improved, and two as unimproved, while twenty-eight remain in the hospital.

#### COMMENT

The substitution of diathermy for malaria in the treatment of dementia paralytica has, in our hands, met with almost complete failure. While it is admitted that the patients were not of the best type, that the treatment may not have been sufficiently prolonged and that the use of arsenical therapy as an adjuvant was not pushed to the possible limit, the fact remains that, in comparison with the results from malaria, the benefit to the patients has been far from impressive. The difference becomes more notable as the period of time elapsed after the treatment becomes longer. In our opinion the early reports on the diathermy treatment of dementia paralytica were published after too short a period of observation, especially since even now it is less than five years since Neymann and King and Cooke first began their experiments.

We are unable to pronounce any judgment on the widely heralded use of radiotherapy in the treatment of the same disease. This procedure, like that of diathermy and of therapeutic malaria, will have to go through a period of clinical trial and histologic verification before its true value in neurosyphilis becomes established. We deplore especially the broadcasting of premature reports through nonprofessional periodicals, although the hurried publication of first results in medical journals is also to be regretted. Even in our diathermy cases we do not feel that the course of the patients under our care has reached a stationary phase, although we have a sufficient number of five year and

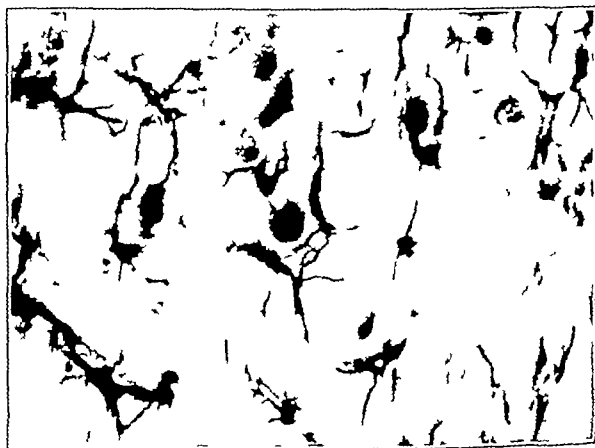


Fig 6 (case 6)—Ganglion cells faintly outlined surrounded by processes of hypertrophied microglia, in hippocampus.

ten year records in the case of therapeutic malaria to be able to pass fairly accurate judgment.

This is not the place to enter on a discussion of the method by which malaria works in neurosyphilis, but, at least from our experience, it would not seem to be the bodily temperature reached, because the same or even higher temperatures are reached in diathermy. Whether it is the activation of the reticulo-endothelial

system in malaria that is absent in diathermy or whether there is more efficient forced drainage of the neural parenchyma during the febrile paroxysm of malaria, as suggested by one of us<sup>1b</sup> is still a matter for further consideration

#### CONCLUSIONS

We do not wish to express ourselves too strongly concerning the poor results in cases of dementia paralytica submitted to diathermy, feeling that possibly some factor in the handling of our case has been neglected. However, we feel justified in stating that diathermy is not an altogether innocuous treatment but is sometimes dangerous, especially in individuals subject to convulsive seizures. We have observed no case of improvement in patients subjected to diathermy alone, and, in many cases, previous and subsequent treatment by preparations of arsenic and of bismuth has not prevented the patients from deteriorating.

The high percentage of deaths (28) in our small series over a period of four years contrasts very unfavorably with the results obtained in malaria.

The histologic control in six cases has revealed persistent inflammation in every case

## CONGENITAL ATRESIA OF THE ALIMENTARY TRACT

### DIAGNOSIS BY MICROSCOPIC EXAMINATION OF MECONIUM

SIDNEY FARBER, M.D.

BOSTON

My purpose in this paper is to describe a simple procedure for the early diagnosis of congenital atresia of the esophagus or intestine by means of microscopic examination of the meconium.

Congenital atresia of the intestine has been recently treated in its various aspects by Ladd.<sup>1</sup> He emphasizes the great importance of early recognition and surgical intervention. The methods of roentgenologic diagnosis of esophageal atresia have been described by Vogt.<sup>2</sup>

The procedure I am reporting has proved of value and has the advantages of simplicity and accuracy. It is based on the well established fact that a considerable part of the bulk of meconium is made up of swallowed amniotic sac contents. Amniotic sac contents, in addition to the amniotic fluid, consist of vernix caseosa, lanugo hair and cornified epithelial cells, all derived from the skin of the fetus. The origin of meconium, according to Feldman,<sup>3</sup> is as follows:

- 1 Swallowed liquor amni, with its added ingredients
- 2 Bile and pancreatic secretions
- 3 Intestinal secretions
- 4 Desquamated intestinal epithelium.

Congenital atresia of the alimentary tract occurs at some time before the third month of intra-uterine life.<sup>1</sup> Vernix caseosa and cornified epithelial cells are not present in the amniotic sac contents in large amounts until the last few months of pregnancy. It is therefore

apparent that, should congenital atresia be present at any point in the alimentary tract, none of the amniotic sac contents will be found in the meconium. In such cases, gross examination of the meconium has not yielded much information because of the variation in the normal appearance of meconium.

There are a few references in the older literature to examination of the meconium in such cases, but no reference has been found concerning the procedure recommended here, although the general underlying principles have been noted. Feldman<sup>3</sup> mentioned, for example, that "in those rare cases where the esophagus is congenitally occluded the component parts coming from the liquor amni, viz, vernix caseosa and lanugo hairs, are not found."

The most constant and easily recognizable constituents of that part of meconium derived from swallowed amniotic sac contents are cornified epithelial cells. The ease of recognition of the cornified cells in the amniotic sac contents and the significance of their presence have

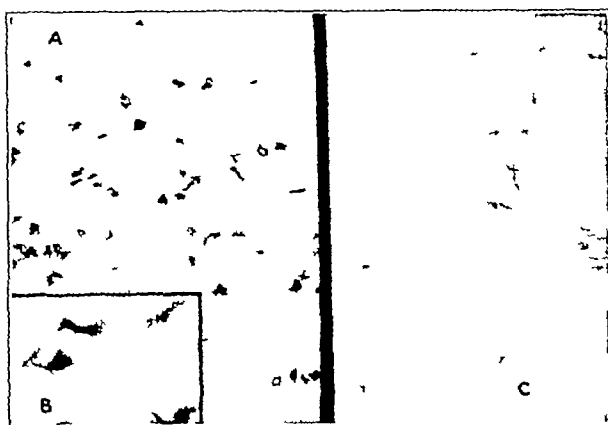


Fig. 1. A low power view of smear of normal meconium showing large numbers of cornified epithelial cells (methyl violet stain). B high power view of A. Cornified epithelial cells are slightly turned on edge. C low power view (same magnification as in A) of smear of meconium from a patient with congenital atresia of the small bowel. Total absence of cornified cells may be noted. Only mucus is seen.

been amply studied in another connection (aspiration of amniotic sac contents in the lungs).<sup>4</sup> These cells have no nuclei, are large and thin, and are often found slightly turned on edge. They resemble large scales. Cornified cells can be found in large numbers without difficulty in normal meconium. Since they are derived from the skin of the fetus and must be swallowed to appear in the meconium, their presence in the meconium is proof that the gastro-intestinal tract is patent throughout. The absence of cornified epithelial cells from the meconium is proof that a point of atresia is present somewhere in the alimentary tract.

The cornified cells may be recognized in unstained preparations of meconium, after some experience. For accurate work, however, I have developed a method for the recognition of cornified epithelial cells in smears of meconium. I was aided by the fact that cornified cells, after being stained by Sterling's gentian violet (of the ordinary gram stain for bacteria) and decolorized by acid alcohol, retain the stain, while all other cells are decolorized.<sup>5</sup> To lessen difficulties in microscopic exam-

From the Department of Pathology of the Harvard Medical School and of the Children's Hospital and the Infant's Hospital.

<sup>1</sup> Ladd, W. E. Congenital Obstruction of the Small Intestine to be published.

<sup>2</sup> Vogt, E. C. *Am J Roentgenol* 22: 463 (Nov.) 1929.

<sup>3</sup> Feldman, W. M. *The Principles of Antenatal and Postnatal Child Physiology*. London: Longmans, Green & Co. 1920.

<sup>4</sup> Johnson, W. C. and Meyer, J. R. *Am. J. Obst. & Gynec.* 9: 151 (Feb.) 1925. Farber, Sidney and Sweet, L. W. *Amniotic Sac Contents in the Lungs of Infants*. *Am J Dis Child* 42: 1372 (Dec.) 1931.

<sup>5</sup> Schmorl, G. C. *Die pathologisch histologischen Untersuchungs-methoden*. Leipzig, F. C. W. Vogel 1928, p. 219.

ination of a smear of meconium due to the large amounts of fatty material present, I have found it helpful to treat the smear with ether or xylene before staining. The procedure is as follows:

- 1 Make a thin smear of meconium on a glass slide
- 2 Place the slide either immediately or when dry in a dish containing ether for from one to five minutes, until fatty substances disappear
- 3 Dry in air for a few seconds
- 4 Stain for one minute with Sterling's gentian violet.
- 5 Wash in running water
- 6 Decolorize with acid alcohol
- 7 Dry and examine

The cornified cells stain deep blue. All other cells are decolorized.

A prettier stain is obtained if methyl violet is used instead of gentian violet. With methyl violet, from five to fifteen minutes of staining is required, and very light decolorization with acid alcohol is sufficient. Gentian violet, however, stains more quickly, the stain does not deteriorate, and the cornified cells resist acid alcohol decolorization much more effectively than when stained with methyl violet, thereby permitting greater ease of recognition of the cells.

#### SOLUTIONS FOR STAINING<sup>6</sup>

##### 1 *Sterling's Gentian Violet for Gram's Stain*

Gentian violet	5 Gm.
Alcohol (95 per cent)	10 cc.
Aniline	2 cc.
Water	88 cc.

This solution keeps remarkably well.

##### 2 *Acid Alcohol*

Hydrochloric acid	1 cc.
Alcohol (70 per cent)	99 cc.

##### 3 *Methyl Violet*

There are two permanent stock solutions from which the aniline methyl violet solution can be made when desired.

##### Solution I

Absolute alcohol	33 cc.
Aniline	9 cc.
Methyl violet in excess	

##### Solution II

Saturated aqueous solution of methyl violet

##### Stain with

Solution I	1 part
Solution II	9 parts

This mixture should be made up fresh every time and will keep at most for fourteen days.

#### SUMMARY

1 A simple procedure for the early diagnosis of congenital atresia of the esophagus and intestine is based on the constant presence in normal meconium of cornified epithelial cells, which are derived from the skin of the fetus and which are swallowed with the other amniotic sac contents to contribute to the formation of meconium.

2 Microscopic examination of smears of normal meconium, when treated with ether, stained with Sterling's gentian violet and decolorized by acid alcohol reveals large numbers of cornified epithelial cells. All other cells are decolorized by this method, thus permitting easy recognition of cornified cells.

3 The absence of cornified epithelial cells in smears of meconium is proof of the existence of congenital atresia of the alimentary tract.

300 Longwood Avenue.

## CHRONIC INFECTIONAL EDEMA

FRANKLIN A. STEVENS, M.D.

NEW YORK

Ten years after Fehleisen<sup>1</sup> isolated the streptococcus from the skin lesions of erysipelas, Sabouraud<sup>2</sup> obtained cultures of streptococcus from patients with recurrent erysipelas and elephantiasis. Subsequent pathologic studies of the diseased tissues convinced both Sabouraud and Unna<sup>3</sup> that the edema and fibrosis which they found in the microscopic sections were not the result of circumscribed obstruction to the lymphatics, as in filarial elephantiasis, but to local changes in the tissues. Although they disagreed in some particulars regarding the mechanism underlying the pathogenesis of the edema and fibrosis, they agreed that repeated streptococcal infections which kept the cells bathed in the products of bacterial disintegration that were not adequately drained away were responsible for the pathologic condition. While Sabouraud attributed the hypertrophy solely to streptococcal infection, instances of chronic or recurrent infections with staphylococcus<sup>4</sup> as well as streptococcus<sup>5</sup> causing similar edema and fibrosis have been reported since his original observations were published.

Since 1925 I have studied thirty-eight patients with recurrent infections resembling erysipelas. Half of these were infections of the extremities and half recurrent infections of the face. In all of the patients in whom extensive and permanent edema of the extremities was associated with recurrent erysipelas or lymphangitis, of whom there were five, the vascular and lymphatic circulation had been impaired by operations or disease prior to the onset of the infection. The impaired circulation and the inadequate drainage of the extremities in these patients had apparently lowered the resistance to bacterial invasion and increased the liability to subsequent edema. While an impaired venous or lymphatic circulation has seemed to be important in the pathogenesis of the edema occurring in the arm and leg, edema of the face has followed infections without similar predisposing circulatory disease. Neither the severity, the frequency nor the extent of the facial infections has had the least relationship to the development of the edema. Chronic infections of the sinuses have, however, appeared important in this respect. Four of the five patients with facial edema had infected antrums or ethmoidal sinuses. The importance of these infections is emphasized by the absence of similar infections among the fourteen patients in whom edema has not developed.

Isolated attacks of erysipelas differ in several respects from recurrent attacks. The isolated attacks are usually constitutionally more severe. While streptococcus can be aspirated from the margin of the inflamed area and is found in great numbers in the lymph spaces in microscopic sections in the usual infection, few bacteria are found in the recurrent disease. Amoss has been unable to recover streptococcus from

From the Medical Clinic of Presbyterian Hospital, Columbia University College of Physicians and Surgeons.

<sup>1</sup> Fehleisen. Die Aetologie des Erysipels. Berlin 1883.

<sup>2</sup> Sabouraud Raymond. Sur la parasitologie de l'elephantiasis nostras. Ann. de dermat. et syph. 3: 592. 1892. Soc. franç. de dermat. et syph. 3: 263. 1892.

<sup>3</sup> Unna P. G. Histopathologie der Hautkrankheiten. Berlin 1: 493. 1894.

<sup>4</sup> Delbanco, Ernst and Callomon F. Erysipel. Handb. d. Haut u. Geschlechtskr. Berlin 9: 21. 1929. Williams A. W. Oedema Perstans of the Eyelids. Proc. Roy. Soc. Med. 17: 31. 1924.

<sup>5</sup> Delbanco and Callomon, p. 20. Eisenstaedt in discussion on Senear. Arch. Dermat. & Syph. 10: 262 (Aug.) 1924.

the margin of recurrent infections although he found a few bacteria in sections of the skin.<sup>6</sup> All the infections he has reported were on the lower extremities, and all had dermatophyton infections of the feet through which infection entered the skin. Cultures from the areas of dermatitis showed hemolytic streptococcus in four of thirteen patients. In repeated cultures on twenty patients, I have obtained streptococcus by aspirating the inflamed margin during exacerbations of infection only four times. The paucity of bacteria in the recurrent form of the disease has led Amoss to suggest that the inflammation may be due, in some instances, to bacterial products draining through the lymphatics from the portal of infection rather than to actual invasion of the skin by bacteria. Repeated efforts were made to obtain streptococcus from all five patients with facial edema during reinfections, but cultures were obtained from only three, in one from the skin of the face, in one from the buccal mucous membrane, and in the third from the antrum. One of these patients also had a complicating staphylococcal infection. In the other two I never found hemolytic streptococcus, but *Staphylococcus aureus* was constantly present in the nose and sinuses, and, during exacerbations of the edema and inflammation, was recovered from small pustules appearing on the skin.

I was confronted with several problems in undertaking the treatment of these patients with infectional edema of the face. The circumorbital tissues were so edematous that the eyes were nearly shut, the sinuses of three of the patients were badly infected and required treatment and, in addition, varying degrees of fibrosis were present which would eventually require plastic operations. Fortunately, after the edema subsided, plastic surgery was found necessary in only one case. To prevent recurrent infections and to reduce the edema were the immediate problems.

Assuming that the pathogenesis of erysipelas was similar to scarlet fever in that immunity to both was antitoxic, Birkhaug<sup>7</sup> has advocated the immunization of patients who have recurrent attacks, with toxic filtrates prepared with strains of streptococcus from erysipelas. Amoss<sup>6</sup> also has treated patients with recurrent infections of the leg successfully with filtrates. His treatment was not confined to immunization, however, because all of his patients had epidermophyton infections of the feet which served as portals of entry for the streptococcus, and treatment of this eczema was instituted at the same time that immunization was begun. McGlasson's<sup>8</sup> observation that recurrent erysipelas and cellulitis of the leg in patients with ringworm dermatitis of the feet could be controlled by curing the dermatitis without immunizing to streptococcus emphasizes the importance of treating the focus of infection and raises the question of the necessity for immunization. Among my patients with recurrent infections were some with dermatophyton infections similar to those reported by Amoss<sup>6</sup> and McGlasson<sup>8</sup> and others in whom no dermatitis or abrasion was found through which streptococcus might enter the skin. Many of the former infections have been controlled solely by healing the dermatitis, and the latter by immunization alone. But the patients with

facial edema and sinus infections have been more difficult to treat than those with uncomplicated recurrent infections. The infected mucous membrane lining the infected sinuses has presumably been as edematous as the overlying tissues of the face. Irrigation of the sinuses, permanent drainage and vaccines of streptococcus and staphylococcus have failed to reduce the edema or control the recurrent infections, but the sinus infections have improved, the edema has subsided and recurrent infections have ceased, following repeated inoculations with toxic filtrates, after the sinuses were adequately drained.

Both Birkhaug and Amoss have tested patients with intracutaneous injections of toxic filtrates of type strains of streptococcus prior to immunization. They then immunized with filtrates of strains to which the individual patient reacted. In our series this testing has often been unsatisfactory, because the reactions were faint, varied from time to time and, in patients with edema, have been almost uniformly negative. Since the cutaneous reactions failed to indicate the proper strain for immunizing the individual patient, a mixture of filtrates from three type strains has been used for inoculating the patients with streptococcal edema. Fortunately, staphylococcus filtrates have many of the properties of filtrates of streptococcus.<sup>9</sup> Some strains produce a potent toxin if grown several days in proteose peptone broth in an atmosphere of carbon dioxide. These filtrates have recently been used in the treatment of furunculosis and acne.<sup>10</sup> On account of the similarity between the streptococcal and staphylococcal infections with edema, toxic filtrates of staphylococcus have been employed in the patients with staphylococcal infections. Several series of inoculations have been given each patient. Beginning with dilutions of 1:200, subcutaneous injections have been given twice each week, increasing the dose gradually until 1 or 2 cc of undiluted filtrate could be tolerated. During the immunization a critical dose was reached, usually between 0.1 and 0.2 cc of undiluted filtrate, which caused redness, increased edema and swelling of the face. These reactions have been specific, occurring only with staphylococcus filtrates in staphylococcal infections, and with streptococcus filtrates in infections with streptococcus. If the amount of filtrate injected was reduced the reactions ceased, and subsequently, by gradually increasing the dose, 1 or 2 cc of undiluted filtrate eventually could be administered. Recurrences of infection occurred between series of inoculations. But with each series the edema and inflammation have receded until, at the present time, recurrences of infection have ceased and the faces are normal except for residual fibrosis. These patients have been tested intracutaneously also, with nucleoproteins of streptococcus and staphylococcus, with toxic filtrates and filtrates devoid of toxins, and filtrates devoid of toxin have been injected subcutaneously to evoke focal reactions. The details of the treatment are given in the following case histories.

#### REPORT OF CASES

CASE 1—J. K., a boy, aged 14 (fig. 1) in 1927 came to the clinic with a history of repeated attacks of erysipelas beginning in 1922. The first attacks had been so prolonged and so severe

6 Amoss H. L. Treatment of Recurrent Erysipelas, *Ann Int Med* 5: 500 1931.

7 Birkhaug K. E. The Etiology of Erysipelas, *Arch Path* 6: 441 (Sept.) 1928. Erysipelas. VI. Immunization with Soluble Toxin from Streptococcus Erysipelatis Against Recurrent Attacks of Erysipelas, *J. A. M. A.* 88: 885 (March 19), 1927.

8 McGlasson I. L. Recurrent Erysipelas of the Legs with Dermatitis of the Feet, *Arch. Dermat. & Syph.* 14: 679 (Dec.) 1926.

9 von Lingelsheim H. A. W. *Actiologie und Therapie der Staphylokokken* Beitr. z. exper. Therap. 1: 49 1899. Neisser M. in Kolle and Wassermann. *Handbuch der pathogenen Mikroorganismen* ed. 2. Jena 4: 375 1912. Parker Julia T. The Production of Exotoxin by Certain Strains of *Staphylococcus aureus*, *J. Exper. Med.* 40: 761 (Dec.) 1924.

10 Weise, E. C. *Staphylococcus Toxin in the Treatment of Furunculosis*, *J. A. M. A.* 95: 324 (Aug. 2) 1930. Greenbaum, S. S. and Harkins M. J. *Staphylococcus Filtrates in Chronic Staphylococcal Pyoderma*, *ibid.* 90: 1699 (May 26) 1928.

that he had been admitted to several hospitals on account of the gravity of the constitutional symptoms. On one occasion erysipelas serum had been given with prompt relief, and on another the antrums were irrigated but records of these admissions with more detailed information could not be obtained.

When he was first under observation, the circumorbital tissues, the nose, the cheeks and the lips were intensely swollen and inflamed, with incrustations and excoriations of the palpebral fissures and of the nares. The lips, however, were the most prominent part of the face for, in addition to the edema, tremendous amounts of fibrous tissue had been formed until each lip was fully 3 cm thick. Cultures made from the nose, conjunctivae and throat showed both hemolytic streptococcus and *Staphylococcus aureus*. Although the antrums and ethmoids appeared infested in roentgenograms, the edema and excoriation of the nose prevented adequate treatment, though subsequently, after the edema had partially subsided, thorough irrigation was possible. The edema would partially disappear and then an acute inflammatory attack would occur, leaving the face in a much worse condition. Cultures taken from material aspirated from the upper lip during one of these exacerbations yielded the hemolytic streptococcus. The patient was tested with filtrates of erysipelas strains at this time with negative results, but on account of the history of the preceding

In February, 1933, he had an attack of tracheitis and pharyngitis. Hemolytic streptococcus was found in the throat and sputum at this time, but there was no recurrence of the erysipelas or of the edema.

CASE 2—M C, a girl, aged 14 (fig 3), was seen in the clinic in January, 1930. At 2 years of age, the skin of the neck and face was infected for six months, and from this time until she was 9, the lips, eyelids and cheeks were swollen constantly. The swelling was especially severe after colds, when papules appeared around the nostrils and eyes. At times a recurrent blepharitis denuded her eyelids of lashes. When she was first examined, the entire face was edematous. The upper lip and the circumorbital tissues were most markedly swollen and red, pitting on deep pressure. At intervals the swelling was so intense that the eyes could scarcely be opened and speech was difficult. The antrums were found infected with *Staphylococcus albus*, *Staphylococcus aureus* and *Streptococcus viridans*. The sinuses were irrigated and a vaccine of these bacteria was given, but even with this treatment she had three recurrences with fever and edema following colds. Reexamination of the sinuses showed insufficient infection to account for the edema.

In December, 1930, she was seen during an acute attack. The infection did not resemble erysipelas because the entire area previously affected had become uniformly swollen, without a definitely raised margin. Material aspirated from the inflamed skin grew no bacteria, but staphylococcus was obtained from several small pustules at the margins of the lids. The skin of her forearm was tested with toxic filtrates of streptococcus and staphylococcus, and with these nucleoproteins, without causing a local erythema. The association of streptococcus and staphylococcus in the preceding case led at first to treatment of the case as a mixed infection with both these bacteria.

Toxic filtrates of these two bacteria were administered until August, 1931, in gradually increasing doses. Small doses were administered without reactions, but as the dose was increased the face would swell, about twenty-four hours after the injection. The amount of filtrate given was increased, regardless of these reactions, until eventually a point was reached at which undiluted filtrate could be given without causing edema. A recrudescence of the infection occurred in November, 1931, so a series of inoculations was given during the subsequent winter. The edema and inflammation gradually subsided and, although the patient had several colds, her face was not swollen at the time. By 1932 (fig 4) the

edema and inflammation of the face had almost subsided. She was tested with large subcutaneous doses of streptococcus filtrate, toxic filtrate of staphylococcus, and filtrate devoid of toxin. The inflammation increased only after injections of staphylococcus filtrates. Since this was the only proved sensitization, a series of inoculations with this filtrate alone was begun. The edema was practically gone, if compared to the condition of the face when first under observation. No necessity for further treatment is anticipated after the current series of inoculations. This last series of injections with nontoxic staphylococcus filtrate has caused edema and eczema of the upper part of the face during the administration of doses of 0.1 to 0.2 cc of filtrate. Once edema and inflammation occurred after 0.005 mg of the nucleoprotein of staphylococcus. This eczema subsided after the dose was reduced.

CASE 3—Following a keratitis of the left eye in 1923, H G had periodic attacks of inflammation and facial swelling at intervals of about six weeks. During the first two years the attacks were severe, with fever, malaise and vomiting but later, when less frequent, these acute exacerbations were milder. Resolution was complete between the first attacks, but after 1928 the face was constantly swollen and inflamed.

The patient came to the clinic in 1929. The forehead just above the eyebrows, eyelids, nose, cheeks, paranasal folds and



Fig 1—Patient 1 prior to treatment, Feb 9 1927



Fig 2—Patient 1 Oct. 13 1932 subsequent to a plastic operation on the lips for the removal of fibrous tissue and desensitization with filtrates of hemolytic streptococcus and staphylococcus.

erysipelas he was immunized with a mixture of filtrates of three type erysipelas strains of streptococcus. He had no attacks until the late summer of 1928, after inoculations had been discontinued and, in the meantime, Drs Dunning and Parker had removed strips of fibrous tissue, measuring 2 by 5 cm, from both lips.

Microscopically, these sections were composed of dense edematous connective tissue with areas of degeneration beneath the mucosa. There were no bacteria in these sections. After an acute exacerbation in October, 1928 he was given a vaccine of three type strains of streptococcus and a staphylococcus from his antrum without relief from the recurrences of infection, filtrates were administered from this time on. Tests of his serum at the time of the recurrences of the facial infection showed antitoxins for both staphylococcus and streptococcus. Early in 1929 a double sinusotomy was done and the roots of several teeth were extracted. Inoculations with streptococcus and staphylococcus filtrates were then continued until March, 1932 without subsequent recurrences of infection. The inflammation and edema had then subsided leaving the face normal except for residual fibrosis (fig 2). During his immunization, attacks were provoked at times by the administration of filtrate. The edema and swelling were increased after these attacks, until the amount of filtrate administered was decreased. Finally the patient was able to tolerate large doses of undiluted filtrate.

upper lip were firm, swollen and inflamed. According to the history, the attacks of inflammation had begun on the left cheek, and then occurred alternately on the two sides until the edema was permanent, after this, the two cheeks were affected simultaneously. When these attacks occurred, the swelling increased gradually for two or three days before reaching a maximum, occasionally papules appeared on the cheeks, and then the inflammation slowly subsided. Material aspirated from the skin showed staphylococci but no streptococci, and none were found in cultures of the nose and throat. The tonsils had been removed. The teeth and gums were not infected. Investigation of the nose showed a purulent infection of the antrums and ethmoids, which were drained and irrigated for six months when a left maxillary sinusotomy was considered necessary. Cultures of the antrum yielded *Staphylococcus aureus*. Continued antral irrigations and the administration of an autogenous vaccine of this bacterium failed to reduce noticeably the swelling of the face or to prevent intermittent acute inflammation.

In December, 1929, the skin of the forearm was tested with filtrates and nucleoproteins of *Staphylococcus aureus* and hemolytic streptococcus. The staphylococcus filtrate, both with and without toxin, and the nucleoprotein of this coccus caused local erythema, but streptococcus products gave no reaction. Following these tests the patient was given subcutaneous doses of staphylococcus toxic filtrate during the winters of 1929, 1930, 1931 and 1932. Local reactions similar to those observed in the previous case occurred during these inoculations. After the inoculations were begun the edema began to subside and at the present time is scarcely noticeable. Aside from one mild attack in May, 1932, she has had no recurrent infections. During the winter of 1932-1933, filtrates of staphylococcus in which the toxin had been destroyed by aging were used, instead of fresh toxic preparations. Focal reactions were as definite and as severe with these filtrates as with those containing toxin. Equivalent amounts of streptococcus filtrate failed to evoke swelling and inflammation of the face.

CASE 4—M. S., a man, aged 34, had an attack of facial erysipelas in January, 1929. Ushered in with a chill, fever, malaise and vomiting, the swelling started at the angle of the mouth and spread over the face, with subsequent closure of the eyes. Attacks of this type, typically erysipelatous, continued at weekly intervals, with some subsidence of the constitutional but not of the local reaction, until the patient was seen in the clinic in March. All the attacks had followed the same course, extending from the lip over the left side of the face. The patient was first observed during the resolution of a recent attack from which the lips, the left cheek and eyelids, and the nose were still inflamed, edematous and vesiculated. The inside of the mouth was inflamed, as well as the skin of the face. Numerous elevated bluish white papules were found on the mucous membrane of the upper lip and the cheeks. Cultures of these papules showed both monilia and hemolytic streptococcus. The left antrum appeared to be infected, but the cultures showed no bacteria.

The skin of the forearm was tested and found sensitive to the filtrates of two of three strains of streptococcus from erysipelas and to streptococcus nucleoprotein, confirming the impression that the infection was of the streptococcal variety. The mixed filtrates of these three strains were administered in increasing doses during April, May, June and July. Attacks occurred at weekly intervals until June and then ceased. A mild attack followed a provocative injection of filtrate in August, a mild spontaneous attack occurred in November and a severe exacerbation in the early summer of 1931. Following this last attack, filtrates were administered by the patient's physician for six months. Attempts to eliminate the monilial infection entirely were futile. In July, 1932, he was admitted to the

hospital for the study of a pentosuria. He had not had attacks for nine months. Although the face was not edematous, the upper lip, the left cheek and the lower left eyelid were slightly fibrosed.

CASE 5—E. M., a girl, aged 17, first noticed irregular nodular swelling of the buccal mucous membrane and of the cheeks. These mild inflammatory attacks occurred at irregular intervals, but a typical acute attack of erysipelas six months after the onset was followed by similar attacks at intervals of about eight weeks. In 1919, three years after the onset of the infection, the left antrum was irrigated and a strip of tissue was removed from the upper lip, which had become hypertrophied and fibrotic. Short periods of freedom from attacks were observed following this operation, following childbirth in 1922, and later, subsequent to a second period of antral irrigations and the administration of a vaccine of hemolytic streptococcus from cultures yielded by material from this sinus.

The patient was first seen in January, 1927. The upper lip was slightly edematous and fibrotic, and the left side of the face was swollen but without marked deformity. The buccal mucous membrane was roughened with acuminate eroded papules. Cultures of the throat and of the buccal membrane



Fig 3—Patient 2, Feb 8 1930, previous to treatment.



Fig 4—Patient 2 Nov 11, 1932, subsequent to desensitization with staphylococcus filtrates.

yielded a hemolytic streptococcus and a diphtheroid. Since one period of freedom from attacks had followed the administration of streptococcus vaccine and the attacks at this time were mild and occurring only at intervals of from four to six months a vaccine prepared with three erysipelatous strains was administered at intervals of a month. Recurrences continued at irregular intervals under this treatment. In August, 1932, a course of filtrate of the same three strains was given to check the frequent occurrence of nodular swelling of the cheeks similar to the lesions observed prior to the onset of erysipelas. The sinuses, tonsils and teeth were found free from infection at this time. The swelling ceased following these inoculations. Cutaneous tests with toxic filtrates of the three strains of streptococcus from erysipelas, toxic filtrates of staphylococcus and nucleoproteins of these bacteria were negative on several occasions. The blood serum of the patient, obtained during an acute attack, neutralized the toxin of *Streptococcus hemolyticus* and *Staphylococcus aureus*.

#### COMMENT

Birkhaug believed that the immunity developing in the course of an attack of erysipelas was antitoxic but, after Francis suggested the possibility that the patho-

genesis and the recovery from an attack might be of an allergic nature<sup>11</sup> admitted the probability of a hypersensitive element in the recurrent infections<sup>12</sup> In addition to the observations leading Francis to advocate this theory, clinical observations by Amoss and Birkhaug have further substantiated this hypothesis Redness and inflammation occurring at the site of a recurrent erysipelas immediately following inoculations with streptococcus filtrate have been reported by both authors

These focal reactions are analogous to the reactions in tuberculous patients at the site of infection after the injection of tuberculin and indicate a hypersensitization of the tissues that react to bacterial products injected In one instance, in a child with staphylococcal infection, Amoss observed reactions of this variety following inoculations with toxic staphylococcus filtrate I have observed these reactions in the patients with edema of the face with both streptococcus and staphylococcus filtrates In each instance in which the reactions occurred, inoculations with other filtrates than those corresponding to the bacteria recovered from the infected tissues have failed to evoke a focal response, thus proving the specificity of the focal response These specific focal reactions, together with the course of the patients during inoculation, are both evidence of extreme hypersensitization to bacterial products The fact that the reactions were caused by critical doses of filtrate, and subsequently, after several such doses were administered, much larger doses were tolerated without the least reaction but with subsidence of the inflammation, suggests desensitization of the edematous tissues by the series of inoculations The presence of antitoxins for streptococcus and staphylococcus in the blood of these patients and the negative cutaneous reactions to toxic filtrates prove an existing immunity to the toxins of these bacteria and further substantiate my belief that the treatment desensitized rather than immunized As might be anticipated, one course of inoculations has been insufficient to reduce the edema and inflammation and prevent recurrences Exacerbations have occurred in the intervals between the series But after several series extended over a period of three or four years, complete and permanent desensitization has apparently been accomplished

Filtrates of staphylococcus and streptococcus from cultures grown four days contain toxic substances and disintegration products from the bacterial cell When the toxic fraction in the filtrates is destroyed by heat, oxidation or aging, these filtrates are still capable of causing erythematous tuberculin-like reactions if injected intracutaneously in certain patients and in previously sensitized animals These reactions, I have found, correspond to reactions obtained with the purified nucleoprotein derived from the cell bodies The last series of inoculations given these patients was with filtrates devoid of the toxic fractions, yet the focal responses evoked, and the courses of the patients during these series, were similar to those observed with the toxic filtrates One of the staphylococcal infections reacted to 0.005 mg of purified nucleoprotein While the possibility that the edematous tissues might be hypersensitive to toxin even in the presence of antitoxic immunity cannot be completely excluded these reactions with detoxicated filtrate and the nucleoprotein

of the bacteria lead me to believe that hypersensitization to material derived from the disintegration of the cell bodies is the principal factor in the pathogenesis of the edema

620 West One Hundred and Sixty-Eighth Street.

## ROENTGEN VISUALIZATION OF LIVER AND SPLEEN WITH THORIUM DIOXIDE SOL

WITH PARTICULAR REFERENCE TO THE PREOPERATIVE  
DIAGNOSIS OF CARCINOMATOUS  
METASTASES TO THE LIVER

LESTER G. ERICKSEN, M.D.

DUBUQUE, IOWA

AND

LEO G. RIGLER, M.D.

MINNEAPOLIS

Since Radt's<sup>1</sup> original publication in 1929 of his work on visualization of the liver and spleen with a colloidal suspension of thorium dioxide (now marketed under the trade name of Thorotrast) injected intravenously, numerous reports have been published in both the American and the foreign literature on almost every phase of this problem Until Radt's work, methods of examination of the liver and spleen were limited to very gross means of determining its size through indirect methods such as palpation, roentgen examination of the colon, and pneumoperitoneum There were no means of demonstrating structural changes within these organs The spleen and liver had been visualized in animals while other problems were being worked on, but with lethal results<sup>2</sup> Radt, first working with animals and later with human beings, was able to visualize the liver and spleen and demonstrate gross changes very beautifully with a fine colloidal suspension of thorium dioxide The colloidal particles of radiopaque thorium dioxide are phagocytosed by the reticulo-endothelial cells of the liver and spleen, thus casting a shadow of these organs on the x-ray film Later workers have confirmed Radt's work and also broadened its scope, so that now there are numerous publications dealing not only with the experimental side but also with its clinical application<sup>3</sup> The latter consist for the most part of case reports There has been no report of the results of the use of this procedure as a routine examination preoperatively in cases of malignancy, particularly those of

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From the Department of Radiology University of Minnesota Medical School and the University Hospital

1 Radt, Paul. Eine Methode zur roentgenologischen Kontrastdarstellung von Milz und Leber. *Klin. Wchnschr.* 8: 2128-2129 (Nov 12) 1929

2 Keith, W. S. and Briggs, D. R. Roentgen-ray Visualization of the Spleen Following the Injection of Emulsions of Halogenated Oils. *Proc. Soc. Exper. Biol. & Med.* 27: 538-540 (March) 1930

3 Kadrnka, Silvije. Hepatosplenographie. Methode radiologique d'exploration du parenchyme hepatique et splénique par l'introduction intraveineuse de Thorotrast, substance colloïdale à base de dioxyde de thorium. *Schweiz. med. Wchnschr.* 61: 425-428 (May 2) 1931 Bauman, H. and Schilling, C. Zur Kontrastuntersuchung von Milz und Leber (I. Mitteilung). *Klin. Wchnschr.* 10: 1249 (July 4) 1931 Randerath, Edmund. Anatomische Befunde nach intravenöser Thoriuminjektion (präparat Thorotrast Heyden 1073) beim Menschen zum Zwecke der Hepatosplenographie. *ibid.* 11: 144-146 (Jan 23) 1932 Stewart, W. H. Einhorn, Max and Ilich, H. E. Hepatography and Lymphography Following the Injection of Thorium Dioxide Sol. *Thorotrast*. *Am. J. Roentgenol.* 27: 53-58 (Jan) 1932 Dickson, W. H. Thorotrast. *Am. J. New Contrast Medium for Radiological Diagnosis*. *Canad. M. A. J.* 27: 125-129 (Aug) 1932 Ottel, L. S. The Reticulo-Endothelial System and Its Relation to the Roentgen Study of the Liver and Spleen After the Intravenous Administration of Thorium Dioxide Solution. *Radiology* 19: 148-157 (Sept) 1932 Later, W. M. and Ottel, L. S. The Differential Diagnosis of Diseases of the Liver and Spleen by the Aid of Roentgenography After Intravenous Injection of Thorotrast. *Am. J. Roentgenol.* 29: 172-181 (Feb) 1933

11 Francis, Thomas Jr. Pathogenesis and Recovery in Erysipelas. *J. Clin. Investigation* 6: 221 (Oct.) 1928

12 Birkhaug, K. E. Erysipelas. VIII. Bacterial Allergy to Streptococcus Erysipelatis in Recurrent Erysipelas. *J. A. M. A.* 90: 1997 (June 23) 1928

the gastro-intestinal tract. This paper will concern itself primarily with the utility of this procedure.

Work on this problem was begun immediately following publication of Radt's original report and has been carried on continuously since, first with animals and later in clinical cases. Up to this writing we have used the method in eighty-two cases of various types with very gratifying results. We have found the clinical application of it to be surprisingly broad and useful. At the present time it is being used as a routine procedure, preoperatively, in all cases of malignancy of the gastro-intestinal tract to rule out metastases to the liver which are known to occur so early in cancer of the stomach and bowel. We have also found it very useful in other types of metastases, cirrhosis of the liver, primary tumors, abscesses of the liver, differentiation of abdominal masses and the like. The average number of patients receiving thorium dioxide sol at this writing is about four a week.

The experimental phases of the problem have been well worked out by many investigators and will not be discussed in this paper.<sup>4</sup> Since the reticulo-endothelial system is the fundamental basis of the procedure, however, it will be described briefly. The mesenchyme of the embryo is the origin of the so-called reticulo-endothelial system. A certain number of the mesenchyme cells retain their embryonic developmental potentialities and become converted into tissue histiocytes, belonging to one of two types, called respectively the free and the fixed histiocytes. The free histiocytes, wandering cells, or macrophages, have phagocytic prop-

scattered system of specialized endothelial cells is sometimes called the reticulo-endothelial system. Maximow<sup>5</sup> objects to this name, however, for the reason that it refers to only one representative of the system, the reticular cell, and secondly that it creates the incorrect impression that the endothelium of the common blood vessels also belongs to this system. He prefers the term histiocytic system.

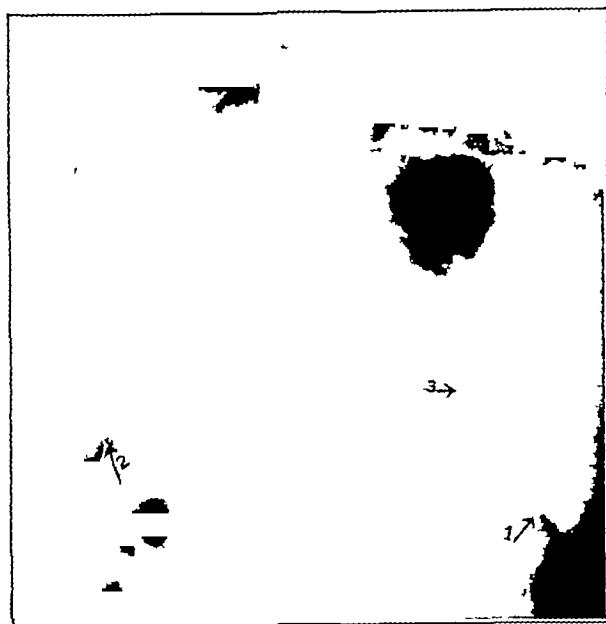


Fig. 2—Cirrhosis of liver. Same case as figure 1, showing relative size of spleen to liver. Arrows 1 and 3 point to border of spleen which is markedly enlarged. Arrow 2 points to lower border of liver.

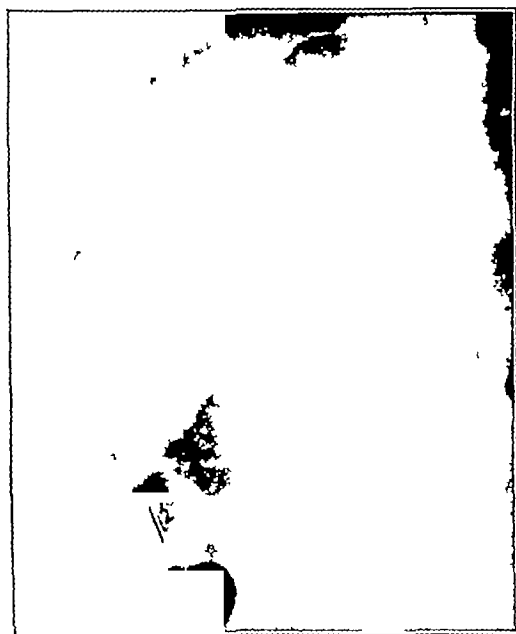


Fig. 1—Cirrhosis of liver moderately advanced. Local film for detail of fine mottling of liver, arrow points to the lower border of the liver.

erties and are to be found in the connective tissue. The fixed histiocytes, or resting wandering cells, are to be found in large numbers in the serous membranes, especially in the omentum and also as histiocytes that have taken up the position of an endothelial lining. This

These cells are found scattered widely throughout the body but are more concentrated in the liver and spleen, where they line the venous sinuses of the two organs. In the liver the cells are known as the Kupfer or stellate cells. The lymph nodes, bone marrow, lungs, kidneys and suprarenals are also well supplied with histiocytic cells. This widely disseminated system comprises cells of very differing function, shape and appearance, but they all possess in common the property of ingesting foreign particles of varying grades of size. It was on this principle that Radt developed his method of visualizing the liver and spleen roentgenologically. The colloidal particles of thorium dioxide, which are opaque to x-rays, are carried through the venous sinuses of the liver and spleen and are phagocytized by the histiocytic cells. How long the thorium particles remain here has not as yet been accurately determined. Elimination is very slow, however, and probably occurs through the intestine and the lungs. Leipert<sup>4</sup> recovered about 70 per cent of the thorium from the liver, spleen and kidneys of a rabbit injected three months before. We have recently undertaken the study of the effect of various drugs in hastening the elimination.

There have been some scattered reports in the literature of damaging effects on the liver and spleen,<sup>6</sup> disturbances of blood counts, and the like, but the majority

<sup>4</sup> Kadrnka<sup>2</sup> Leipert Theodor. Ueber die Verteilung des Thoriums im Organismus nach Injektion von Thorotrast. Wien klin. Wchnschr. 44: 1135-1139 (Sept. 4) 1931. Irwin D. A. The Experimental Intravenous Administration of Colloidal Thorium Dioxide, Canad. M. A. J. 27: 130-135 (Aug.) 1932.

<sup>5</sup> Maximow A. Textbook of Histology Philadelphia W. B. Saunders Company, 1931.

<sup>6</sup> Stewart, Einhorn and Illick<sup>3</sup> Huguenin R. Nemours Auguste and Albot G. Les hépatites et les cirrhoses expérimentales au bioxyde de thorium. Compt. rend. Soc. de biol. 108: 879 (Dec. 4) 1931. Tripoli, C. J. and von Haam E. Effects of Toxic and Nontoxic Doses of Thorium Dioxide in Various Animals. Proc. Soc. Exper. Biol. & Med. 29: 1053-1056 (June) 1932.

of these reports show that it has been necessary to give excessive doses to accomplish these results. Most investigators have yet to discover any damaging effects when used in the doses necessary for diagnostic visualization.<sup>7</sup> It has not been definitely proved, however, that this procedure is entirely harmless. An analysis that calls attention to the potential dangers of the use of thorium

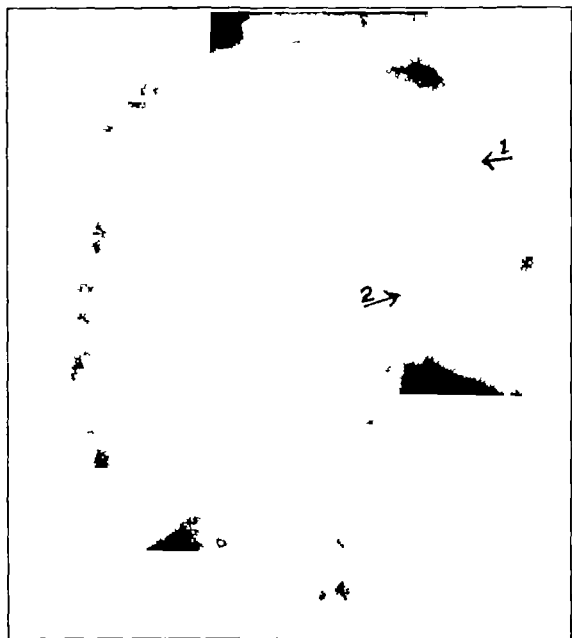


Fig 3—Extensive sarcoma of liver in child of 18 months. Arrow 1 points to largest tumor mass; arrow 2 points to medial border of spleen. Only small areas of normal liver remain to show opacity of thorium.

dioxide sol is given in the report of the Council on Pharmacy and Chemistry.<sup>8</sup> As is pointed out in this article, the greatest danger probably lies in the radioactivity of the thorium. It has been shown that the immediate effects from the radioactivity are minimal, and no harmful effects have been observed locally or generally.<sup>9</sup> Thorium resembles radium, however, in that it breaks down into the subproducts of mesothorium, radiothorium, thorium X, thorium emanation, thorium A, thorium B and thorium C, which, as they are formed, in turn give off alpha, beta and gamma rays. The alpha rays are the only ones that may concern us. When the radioactivity of thorium reaches its minimal level, it then takes about seven years for thorium and its subproducts to reach approximately six tenths of its potential radioactivity.<sup>10</sup> If the radioactivity of thorium is taken to be 1 originally, then after about

seven years it will be approximately 15. With the maximum dose of 75 cc of thorium dioxide sol, one would get an accumulated alpha ray activity to from 15 to 3 micrograms of radium, should no elimination take place.

Although the limit of tolerance for the average person was formerly thought to be about 10 micrograms of radium, bone and tooth changes have been observed in the bodies of radium workers that contained the equivalent of from 2 to 4 micrograms of radium.<sup>8</sup> Therein lies the potential element of danger in its use. Whether this effect of the radioactivity is enough to do the patient any harm is very doubtful, since elimination is taking place constantly. Because of the uncertainty of the speed of elimination, it would be difficult to measure the exact effect of this radiation on the body. As already stated, Leipert has demonstrated 30 per cent elimination from the liver, spleen and kidneys of a rabbit at the end of three months. If this ratio of elimination should continue, one would have but little to fear from delayed radioactivity. The best check on this will probably be the final observation on the patient. Thus far, no harmful effects whatever have been observed by Radt<sup>7</sup> over a period of three and a half years during which animals were followed and two years during which the human cases have been followed. In view of what has been stated, this period of observation is still too short to demonstrate the harmlessness of the procedure. Deleterious effects from the delayed radioactivity might not begin for four or five years after the administration of the material and might conceivably be delayed for as long as nine or ten years. With these facts in mind, the utilization of this method should be cautiously restricted until sufficient time has elapsed to permit a final conclusion as to the actual dangers involved. It is fortunate that the cases in which this diagnostic aid is of most value are those in which the eventual mortality rate is very high, whether the procedure is used or not. Also, the age of these patients is usually advanced. We believe it is wise, until time has eliminated the possibilities of danger from latent radioactivity, to confine it to this group. In other types of cases the dose we have used for outlining the liver and spleen is from one third to one fourth the average dose, and we do not believe this could cause any harm.



Fig 4—Same case as figure 3, showing deposit of thorium dioxide in cervical lymph nodes.

<sup>7</sup> Randerath<sup>3</sup>, Irwin<sup>4</sup>, Raf J. The Effect of Thorotrast on the Blood and Blood Forming Organs. *Folia haemat.* 46: 420-428, 1932.  
<sup>8</sup> Radt, Paul. Zur Kontrastdarstellung von Leber und Milz (Hepato-Lienographie). *Therap. d. Gegenw.* 73: 348-351 (Aug.) 1932.

<sup>9</sup> Report of Council on Pharmacy and Chemistry. Thorotrast. J. A. M. A. 99: 2183-2185 (Dec. 24) 1932.

<sup>10</sup> Bauman and Schilling<sup>5</sup>, Irwin<sup>4</sup>, Radt<sup>7</sup>, Kadrnka, Silvije. Hepatosplenography. *Radiology* 18: 371 (Feb.) 1932.

If the radioactivity of freshly isolated thorium is taken as 100 per cent (considering only the emission of alpha particles) in from four to five years it will decrease to about 50 per cent of the initial level. This is due to the fact that radiothorium, one of the disintegration products of mesothorium, is chemically inseparable from thorium. During the time the radiothorium is disintegrating the concentration of mesothorium (which does not emit alpha particles) is constantly increasing. At the end of the four or five year period enough radiothorium is regenerated from the mesothorium again to increase the emission of alpha particles. In seven more years about one third of the difference is made up in ten years about one half. In order to have thorium dioxide sol at its minimum level of alpha radioactivity it would have to be made from thorium aged from four to five years. The Council on Pharmacy and Chemistry has had no evidence presented that Thorotrast is made from thorium so aged. It seems fair to assume then that Thorotrast as it appears on the market is near its maximum alpha radioactivity. This activity would then follow the curve just elucidated.

One of the functions of the reticulo-endothelial system is to protect the body against infections. The question has been raised as to whether or not the ingestion of the thorium particles by the reticulo-endothelial cells would reduce the defense of the body to these infections. Much has been written with much disagreement on the question of the so-called blocking of this system with colloidal dyes. Some investigators

have found that the animal's resistance was definitely reduced while others have found that it was stimulated. It is a common belief now that since these histiocytic cells are so widely distributed throughout the body it is almost impossible to obstruct the system. Furthermore, microscopic sections of the liver and spleen show that only a small percentage of these cells ingest the

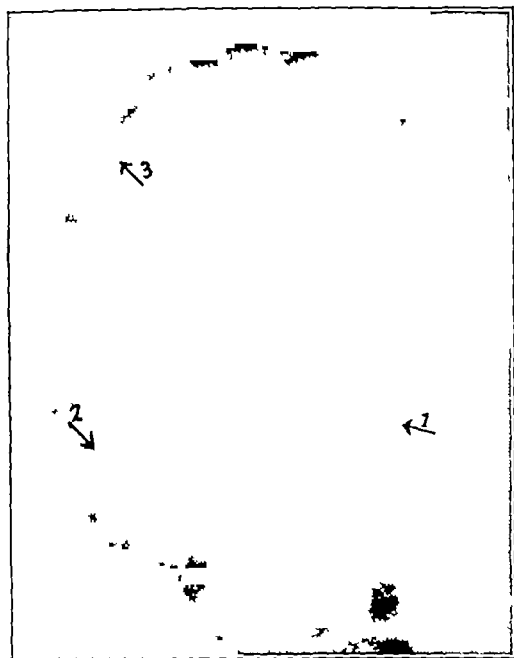


Fig 5—Carcinoma of stomach with extensive metastases to liver with mottled moth eaten appearance of liver more definite areas of metastasis are indicated by arrows 2 and 3 arrow 1 points to liver edge.

thorium, so that this function of the reticulo-endothelial system is very slightly interfered with. In twelve cases of our series, postmortem examination was done at some time after the injection. In all these, careful sections of the liver and spleen were made. The thorium dioxide suspension was detected in the form of refractile bodies in some of the histiocytic cells. A great many cells did not show any of the material and there was no histologic evidence whatever to indicate any cell damage resulting from the foreign body particles. This is the rule, we believe, when amounts not exceeding 0.8 cc of thorium dioxide sol per kilogram of body weight is used. Animals have been exposed to infection and it has been found that those who had been injected with colloidal suspension of thorium dioxide did not withstand infection quite as well as the control animals, however about five times the adult diagnostic dose was used.<sup>11</sup> We, as well as others, have been unable to detect any reduction in the defensive powers of the patient to infection. Dr O H Wangenstein, chief of the department of surgery at the University of Minnesota Medical School, can detect no difference in the postoperative convalescence of a patient who has had thorium dioxide sol and one who has not.<sup>12</sup>

Another point that might be considered an objection to the use of this medium is the length of time it remains within the body. So far, no observations have been made of harmful effects of this delayed elimina-

tion. We have found that this has one advantage. A patient who has been given the preparation may show no evidence of metastasis to the liver on the first examination, with the subsequent development of a metastasis, the roentgen studies may be obtained without further injection. We have had one such patient. It has been quite definitely proved by a number of workers that there is no other possible harm from the use of the colloidal suspension of thorium dioxide.<sup>13</sup>

Contraindications to the use of this preparation have not been well worked out, and those which have been listed are based more on theoretical than on practical grounds. Among those mentioned are conditions wherein the liver function is markedly interfered with, such as liver atrophy, pronounced icterus and far advanced cirrhosis. Extreme enlargements of the spleen and liver have been listed perhaps because of the case of splenomegaly, reported by Buengeler and Krautwig,<sup>14</sup> which ruptured following the injection of thorium dioxide sol. The various syndromes involving lipid dysfunction, Schuller-Christian, Gaucher and Niemann-Pick disease are reported as contraindications on the assumption that the reticulo-endothelial cells have ingested large amounts of fat and are already more or less occluded. It is said that patients who have high temperatures and are extremely toxic are poor risks, but in our experience this is no more true than with other procedures of a similar nature. We have observed no contraindications and have been unable to detect any harm, either experimentally or clinically, with but one exception. This patient was a woman with a far

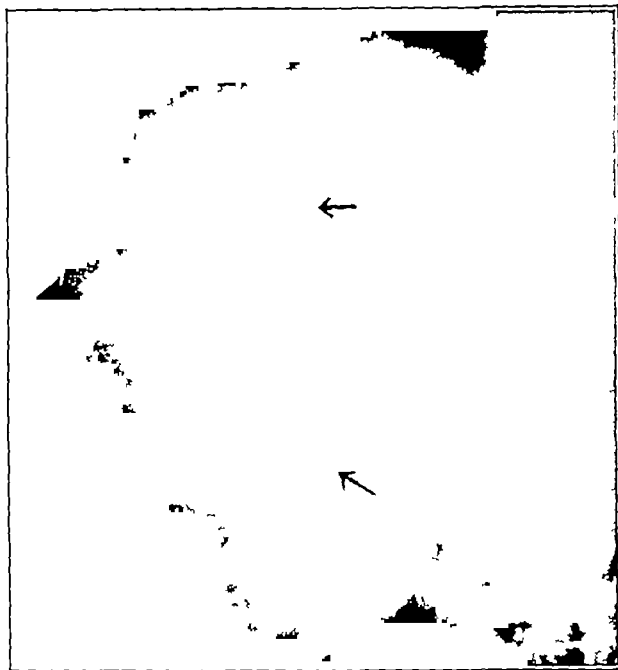


Fig 6—Carcinoma of rectum with Metastases to liver. Large defects in the liver shadow indicate the presence of the metastatic nodules (arrows)

advanced cancer of the stomach. About three hours following the first intravenous injection of 25 cc of thorium dioxide sol, she began to have hematemesis, hemoptysis and hematuria. It was necessary to give

11 Held A. Effectiveness of storage of Thorotrast in Organism in Building up Immunity. *Ztschr f d ges exper Med*. 81: 218-222 1932  
12 Wangenstein O H. Personal communication to the authors.

13 Dickson J, Irwin, Radt, Kadrnka, Otell, Yater and Otell.  
14 Buengeler W and Krautwig J. Is Hepatolienography with Thorotrast a Harmless Diagnostic Method? *Klin Wchnschr* 11: 142 144 (Jan 23) 1932

the patient a transfusion, and she recovered. Previous to this experience we had used the German preparation, but the material used in this case was the first shipment we had received of the product made in this country. Our interpretation of the cause of this reaction was that the size of the colloidal particle of thorium dioxide was too large and the reaction was due entirely to multiple emboli. Following a change in the  $p_H$  of the suspension, we have had no more difficulty. In some of the original animal experiments, this difficulty was encountered, the animals dying of cerebral emboli. It is important that the size of the colloidal particle be very small to avoid this.

This procedure may be used to advantage in a number of conditions in which hitherto we have been severely handicapped in making an accurate diagnosis. Perhaps foremost in value is its application to the preoperative diagnosis of metastasis to the liver. Until Radt's contribution, many an abdomen was opened only to be

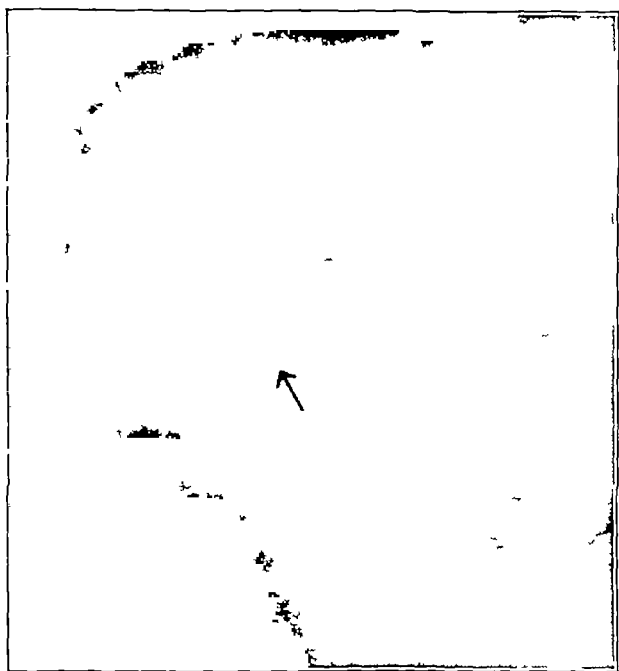


Fig 7—Normal liver as visualized by thorium dioxide sol. Gas in hepatic flexure of colon overlying liver. Care must be exercised to differentiate this from the defect of metastasis.

closed again without further surgery because of metastasis to the liver. It is a well known fact that carcinoma of the stomach metastasizes to the liver at an early stage (fig 5). Too often a malignant growth of the stomach which is easily resectable from the standpoint of the local lesion will prove inoperable because of liver metastasis when the abdomen is opened. The operative treatment of carcinoma of the rectum is a very formidable undertaking. How often has a patient uselessly been put through this distressing experience only to die a short time later of metastasis to the liver (fig 6)? Nevertheless, no surgeon wishes to deny a patient the benefit of an operation that may cure him of a disease the result of which is otherwise uniformly fatal. It is little wonder, then, that this new diagnostic aid has been so welcome. In the department of surgery at the University Hospital, University of Minnesota, this procedure is now a routine in all preoperative cases of malignancy of the gastro-intestinal tract and in

other primary malignancies when indicated and has proved valuable in preventing needless surgery in many cases.

In almost the same category as the metastatic tumors are the primary tumors (fig 3), cysts and abscesses of the liver and spleen. Although these conditions are rather sporadic in hospital practice, it is nevertheless very helpful to be able to diagnose a case when it is presented. Several case reports have now appeared in the literature on hepatosplenography wherein a diagnosis has been made by this means.

Often a controversy arises concerning the origin of an abdominal mass. The liver or spleen can easily be visualized by a small dose of thorium dioxide sol and diagnosis thus clarified to that extent. Determination of the size of these organs comes in this same field (fig 2). We have been able to demonstrate enlargement of the liver or spleen several times when it was not apparent clinically.

To the clinician, cirrhosis of the liver is one of the most difficult diseases to diagnose in the early stages. It is in the early stages that visualization of the liver and spleen with thorium dioxide is of the greatest help. In place of the homogeneous shadow normally seen on the roentgenogram, one sees a very fine nodular mottling (fig 1). The normal liver tissue capable of taking up the thorium is separated in a netlike manner by the cirrhotic tissue that has replaced it. As the disease progresses to its later stages, this mottling may be lost as more of the normal liver tissue has been replaced, and a shadow of much decreased density appears until finally no shadow is apparent at all. Another helpful point in this condition is the relative increase in the size of the spleen to the liver (fig 2). We have had three cases of liver cirrhosis and they have all shown this picture constantly. We have studied a few cases of leukemia and Hodgkin's disease but, since there is usually no difficulty in the diagnosis of these conditions clinically, we can see no particular value in its use here. The lymph nodes are not visualized following intravenous injection of thorium dioxide sol unless the liver and spleen are practically filled by a very large dose or many of the normal liver cells are replaced by pathologic tissue which will not take up the thorium particles. A case in point is illustrated in figure 3. A baby, aged 18 months, had a large primary sarcoma of the liver with very little normal liver tissue remaining. The anterior and posterior chain of cervical nodes were well demonstrated (fig 4).

As we have gained experience in the use of this procedure, our technic of injection has been modified from that originally described by Radt,<sup>1</sup> Kadrnka<sup>2</sup> and other early workers. They advised that the 25 per cent suspension of thorium dioxide (Thorotrast) should be diluted 1 to 10 in 5 per cent dextrose and slowly injected intravenously in graduated doses, starting with as small a dose as 0.1 Gm per kilogram of body weight. If the patient experienced no reaction, this was increased slowly until a total of 0.8 Gm per kilogram of body weight had been given. Our first few patients were injected in this way. Animal experimental work showed, however, that the dilution was unnecessary. A total dose of 0.8 cc of thorium dioxide sol per kilogram of body weight gives a very diagnostic shadow of liver and spleen when detail is wanted. This is given in three equal doses on successive days. We have never found it necessary to give more than this dosage. Several times we have visualized tissue

detail very well with 50 cc. It is always advisable to give the smallest dose possible for a diagnosis. If it is merely a question of the size of the liver or spleen or the differential diagnosis of an abdominal mass, one ampule (25 cc.) is sufficient. The speed of injection makes little difference, but it is important to warm the preparation to body temperature before giving it.

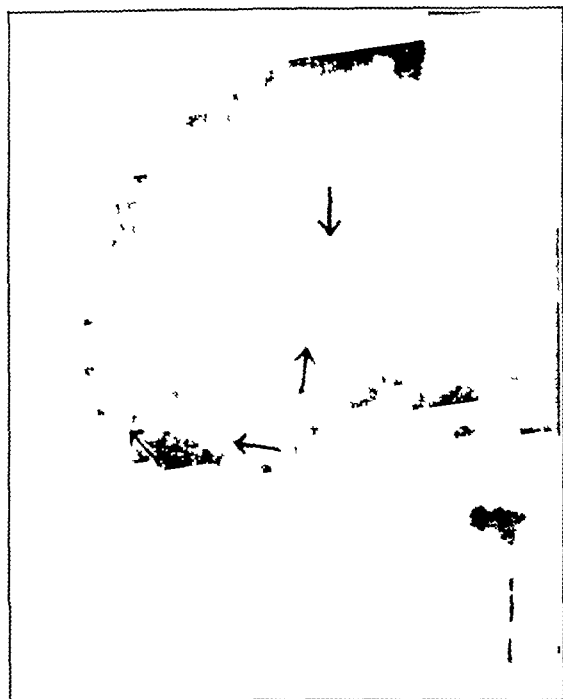


Fig 8—Normal liver as visualized by thorium dioxide sol. Rounded area of rarefaction in medial portion is constantly seen in region of gall bladder fossa and striations which are due to venous channels (arrows)

We have observed only the one severe reaction in spite of the fact that we have carried out the procedure on some patients who were in very poor condition.

The films should not be taken sooner than twenty-four hours following the last injection and they are better at forty-eight hours. It has been well shown that there are free thorium particles in the venous sinuses of the spleen even two weeks after the injection, indicating the slowness with which the particles are taken up from the blood stream<sup>15</sup>. Thus, at forty-eight hours, a better shadow will be seen than at twenty-four hours. A 14 by 17 inch film is taken of the abdomen on the Potter-Bucky diaphragm with the patient prone. A relatively heavier exposure is given here than with the routine abdomen film. This large film will give the relative relationship and size of the liver and spleen. If detail is desired, a second film of 10 by 12 inch size is taken, centering over the lobes of the liver or spleen, the Potter-Bucky diaphragm and a large diaphragm opening being used. A third film is then taken, the same factors being used with the exception that a slightly heavier exposure is given. The latter film will be somewhat darker than the former. The lighter film will show metastatic areas in the thinner portions of the liver, while the darker brings out areas of rarefaction in the thicker portions.

Interpretation of the films in the field of malignancy requires much experience but may become very accurate. Metastatic areas, abscesses, cysts or other tumors

will all show as areas of rarefaction in the liver, giving it a mottled appearance (figs 5 and 6). If these areas are numerous, the problem is very simple. It is not possible to differentiate from a roentgenologic point of view between abscesses in the liver and metastases. Both will appear as ragged areas of rarefaction, while cysts have a sharper, more circumscribed border. One must, however, be very careful of shadows cast by overlying gas in the bowel (fig 7). Should there be bowel shadows overlying the liver, which are confusing, a cleansing enema should be given. Occasionally gas in the duodenum will be confusing. This, however, will not be constant on successive examinations. The constancy of the rarefied areas as to location and size in the series of films taken is also very helpful. Occasionally the vascular channels of the liver stand out exceptionally well (fig 8). These, however, have a radiating character and are linear and sharply defined. An area of rarefaction is usually seen in the gallbladder fossa, probably owing to the large ducts in this region (fig 9). We have observed a case of considerable interest in this connection. A woman had been operated on for cholecystitis three times by competent surgeons, and no gallbladder had been found. An examination with thorium dioxide sol revealed a large defect in the region of the gallbladder fossa which we interpreted as being produced by an intrahepatic gallbladder. This

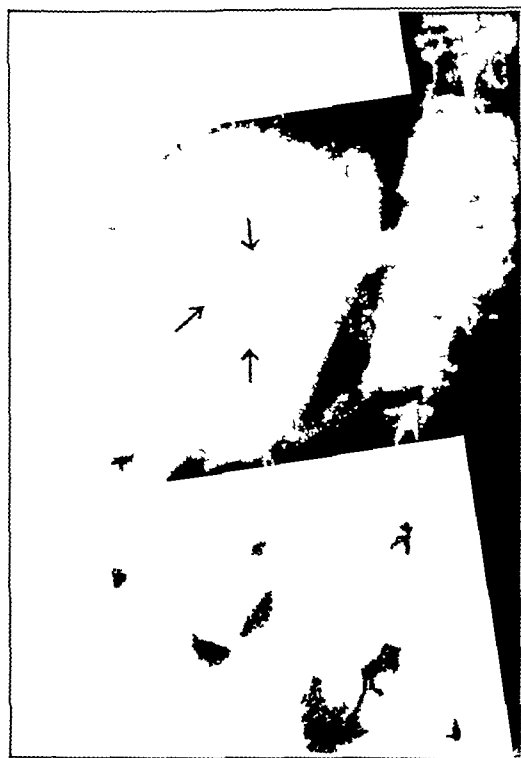


Fig 9—Normal liver as visualized by thorium dioxide sol. Normal defects in region of gallbladder fossa are caused by larger bile ducts (arrows)

fossa is always sharply defined, always in the same location and causes little trouble when one gains experience in interpreting the films. To date, we have been checked either by operation or by postmortem examination on twenty-two diagnoses, and in twenty-one of these the diagnosis given previous to the operation proved correct. Fourteen cases were reported as presenting no malignant metastasis, while metastases were

present in eight. Twelve were checked by autopsy and ten by operation. The one case in error was in a man, aged 48, with a carcinoma of the stomach. He was reported as having no carcinomatous metastasis to the liver. A resection was done and the patient died the ninth day after operation of peritonitis from a leak at the anastomosis. At autopsy he had one small metastatic area about 1 cm in diameter. On reviewing the original films, this was easily recognized.

It is preferable to make an error on the negative side, however, than on the positive side. Occasionally we have been in doubt in a case that showed possibly one small questionable area of defect in the liver. Our advice in such a case has been to give the patient the benefit of the doubt and do a resection if nothing is found on exploration, since the mortality would be 100 per cent without the operation. Until, through much experience, we feel entirely confident in our diagnostic ability, we believe this to be the best attitude to take. Up to the present time, we have used this procedure in eighty-two cases of various types, distributed according to the accompanying table.

*Distribution of Various Types of Disease*

Disease	No of Case	Disease	No of Cases
Carcinoma of stomach		Carcinoma of lung	
Negative diagnosis	20	Negative diagnosis	1
Positive diagnosis	10	Cirrhosis of liver	
Carcinoma of colon		Positive diagnosis	3
Negative diagnosis	3	Actinomycosis	
Carcinoma of rectum		Positive diagnosis	1
Negative diagnosis	5	Intrahepatic gallbladder	
Positive diagnosis	6	Positive diagnosis	1
Carcinoma of breast		Hodgkin's disease	
Negative diagnosis	3	Negative diagnosis	2
Positive diagnosis	3	Positive diagnosis	3
Carcinoma of ovary		Size of liver and spleen	6
Negative diagnosis	1	Differentiation of abdominal masses	2
Primary malignancy of liver		Leukemia	3
Positive diagnosis	2	Pernicious anemia	1
Malignancy primary unknown		Polycythemia vera	1
Negative diagnosis	1	Subdiaphragmatic abscess	1
Positive diagnosis	2		
Melanoma			
Negative diagnosis	1		

#### SUMMARY

1 Hepatosplenography is of value as a routine examination preoperatively in cases of malignancy.

2 To date, this procedure has been used in eighty-two clinical cases of various types without apparent harm and with very gratifying results.

3 It has been found to be of great value in gastrointestinal malignant growths preoperatively.

4 In the interpretation of films, when in doubt a negative diagnosis is made.

5 Certain phases of this procedure which hitherto have not been emphasized, are

(a) The advantage of delayed elimination in the follow-up examination for the demonstration of the development of metastases.

(b) The danger of delayed radioactivity of thorium after several years.

(c) Its particular value in preventing needless surgery in cases of malignant growths of the gastrointestinal tract.

(d) The fact that films should not be taken sooner than twenty-four hours following the last injection.

(e) The observation of an area of rarefaction constantly seen in the region of the gallbladder fossa.

(f) The unusual accuracy of the procedure.

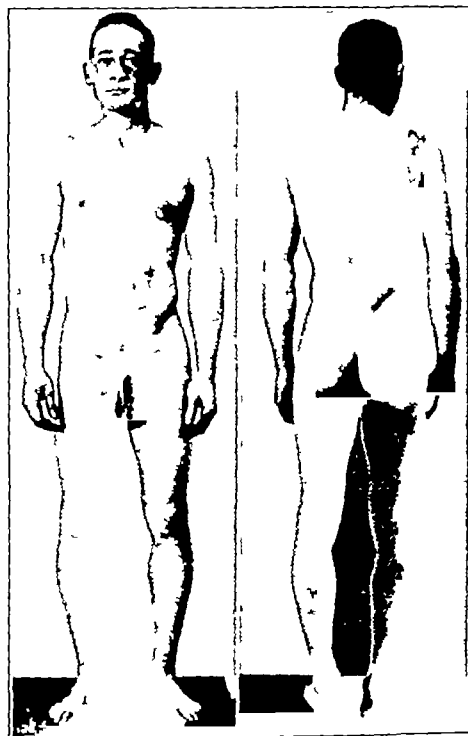
## Clinical Notes, Suggestions and New Instruments

### TOTAL LOSS OF PIGMENT IN A NEGRO (ACQUIRED FORM)

ELMORE B. TAUBER, M.D. AND RAYMOND G. SENOUR, M.D. CINCINNATI

Achromoderma in the Negro may be classified in two forms, the congenital and the acquired. Reports of cases of the congenital type are numerous. Musser, in 1924, traced a family tree of three generations of Negroes and showed recessive characteristics in albinos. The literature since then has been voluminous but has no bearing on our particular case.

The second, or acquired, form of achromoderma is extremely rare. Only one other case has been reported up to this time. This report was published in 1931, by Dr. Lewis A. Golden<sup>1</sup> of Boston. A resume of this Negro's condition appeared in the *Boston Medical and Surgical Review* on July 26, 1917, the case



Appearance of patient after pigment returned in a few areas following exposure to ultraviolet rays.

having been shown by the late Dr. Thorndyke. Apparently, our case is the second of its kind.

#### REPORT OF CASE

J. W., a Negro, aged 32, had a rash seventeen years ago, which covered the entire body. He attributed it to the heat. Following the disappearance of the rash, areas of depigmentation made their appearance, first on the arms and then gradually over the entire body.

In 1917, the patient enlisted in the army, and at that time had a total loss of pigment. A Wassermann test of the blood was negative. In 1919, a penile lesion developed, for which he was given several intravenous injections of neoarsphenamine. These had no effect on the depigmentation.

During the summer of 1930, he exposed himself daily to sunlight and ultraviolet rays, and a few isolated spots of pigment reappeared on the face, neck and shoulders. He presented himself at our clinic on Sept. 24, 1930. The Wassermann test

From the Department of Dermatology, Cincinnati General Hospital and the Department of Medicine, University of Cincinnati.  
1. Golden, L. A. Complete Loss of Pigment in the Skin of a Negro, *Arch. Dermat. & Syph.* 24: 1069 (Dec.) 1931.

was positive. The blood picture was normal, urinalysis gave negative results, and the blood pressure was 125 systolic and 80 diastolic.

It is an interesting fact that this patient was without pigment in the skin from 1917 to 1930.

#### SUMMARY AND CONCLUSIONS

1 The second case of complete leukoderma in a Negro is recorded.

2 In both Dr. Golden's case and our own trauma was the exciting cause followed by a rapid depigmentation.

3 The return of a few pigmented spots after exposure to actinic rays shows definitely that the cells are still capable of producing pigment if the proper stimulation is given them even after long periods of quiescence.

4 Syphilis had no influence on the leukoderma.

#### THE USE AND VALUE OF GOLD RADON SEEDS

IRA I. KAPLAN, M.D., NEW YORK

Director, Division of Cancer, Department of Hospitals; Visiting Radiation Therapist, Bellevue Hospital; Clinical Professor of Surgery, University and Bellevue Hospital Medical College.

As far as present knowledge goes the only therapeutic agents of value in the treatment of malignant conditions are surgery and radiation or a combination of the two.

In irradiation, the element radium is of the greatest importance. Its cost, however, being very high, a less expensive agent but one equally effective was sought, one whose use could be made more general by reason of its lower cost. Such an agent, fortunately, was found with the progress in the study of radium. It was noted that as radium decayed it emitted a gas possessing the same physical and biologic characteristics it had itself. This gas, designated as radon, is short lived, however, lasting no longer than about a month.

Despite this drawback radon came as a powerful aid in the field of radiation therapy in the treatment of neoplastic diseases. Duane in 1914 found that this gaseous radioactive substance could be piped into small glass capsules by which tissues could be irradiated both intratumorally and from the surface. This discovery opened up a new field in cancer treatment and many favorable results followed irradiation by these radon tubules.

It was noticed, however, that in many cases following treatment with these tubules, severe necrosis of both the neoplastic and surrounding normal tissues occurred. Accordingly a careful study was made of the rays emitted from these glass tubules and it was found that while the glass capsules had absorbed the alpha radon rays, the caustic beta and penetrating gamma rays were scarcely affected. Because the beta rays were known to be caustic and destructive in character their elimination in the treatment was necessary in order to avoid burns, except in some minor instances.

Experimental studies have shown that beta rays are absorbed by certain metals, the thicker the metal the greater the absorption. These metals are called filters. In order to filter out the caustic rays in the glass tubules the latter were surrounded by metal, but because the early filter material used was brass or lead the tubules thus covered were rather bulky and quite awkward in use. To overcome this Fialla in 1924 suggested making radon tubules directly from finely drawn gold tubing equal in diameter to the glass tubing theretofore used, but the gold being of 0.3 mm wall thickness, would filter out 98 per cent of the caustic rays rendering unnecessary any bulky external filtration. As these tubules were rather small, they were commonly called "seeds."

In 1924 I began constructing the seeds of platinum with a thread attached to one pole for withdrawal after they had served their purpose in the tissues being treated. However while in some instances the removable radon tubules or seeds might be considered to possess an advantage over the nonremovable type, my experience in the use of both types of applicators in a large group of cases over a long period of time has led me to conclude that the gold seed is of equal value to the removable type and equally applicable in any condition for which this method of therapy is indicated.

Because of some adverse criticism of gold seed radon tubules and some statements reflecting on their leak-proof character I was requested by the New York City Department of Hos-

pitals which purchases large quantities of these seeds, to test the commercial product for content stability and leak-proofness. The tests were made in our physical laboratory as follows:

Samples of "gold seeds" bought in the open market and from the Department of Hospitals were measured by ionometric gamma ray comparisons with a known radium standard.

The seeds were placed in a high pressure sterilizer and left there for half an hour with a steam pressure of 20 pounds. After sterilization the "seeds" were aged three hours and then their intensities were measured as before, and the results showed that none of the gold seeds tested showed any leakage due to sterilization or other causes.

The tests showed that gold seeds supplied by the emanation plant at the Cancer Hospital on Welfare Island, and those of the commercial supply are of equal value as to quality, leak-proofness and sterilizability. By careful electroscopic measurements I have found gold seeds leak proof, even when boiled and sterilized in steam under pressure of 20 pounds.

In my opinion therefore, no justification exists for the statements spread through the literature to the effect that gold seeds, even if properly made, are leaky and not able to be sterilized by boiling or in steam under pressure.

#### COMMENT

Radon tubules in the form of gold "seeds" are practicable and useful in radiation therapy. They are leak proof and may be sterilized without fear of damage along with and in the same manner as surgical instruments.

Experience and scientific tests show that removable platinum seeds offer no advantage over gold seeds.

55 East Eighty-Sixth Street.

#### THE TREATMENT OF TRICHOMONAS VAGINITIS WITH ACETARSONE (STOVARSOL)

GEORGE GELLHORN, M.D., ST. LOUIS

The subject of trichomonas vaginitis has received adequate attention in this country only in the last few years. Today, however, it is common knowledge that a copious thin yellow vaginal discharge with small air bubbles and a disagreeable odor represents a condition that is separate and distinct from all other forms of vaginitis, the physical characteristics of this discharge the marked irritation of the vaginal mucosa and the intense discomfort are typical enough. To make the diagnosis absolutely certain, a drop of the discharge is diluted with a drop of water and examined under a cover glass or in the hanging drop and the trichomonads are easily recognized by their lively rotating motion.

Trichomonas vaginitis is intractable by the usual therapy of vaginal discharge. That fact is best evidenced by the large number of methods that have been recommended in the last few years no less than six different modes of treatment have been proposed. Most of these are based on very energetic mechanical and chemical cleansing and their very multiplicity suggests uncertainty of results.

I would hesitate to add yet another method if I were not in a position to submit a procedure which is based on an entirely different principle and which at the same time is extremely simple and highly efficacious. The credit belongs to Dr. L. D. Cady of this city, who called my attention to the possibilities of acetarsone (stovarsol).

Acetarsone is a synthetic arsenical that has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.<sup>1</sup> In this country and in France it is used largely in the treatment of amebic dysentery.<sup>2</sup> It was Dr. Cady's favorable experience with the drug that made him suggest its use in the treatment of another protozoic condition, namely, trichomonas vaginitis.

The question was merely: Does acetarsone, which heretofore has been given only by mouth, exert the same amebicidal prop-

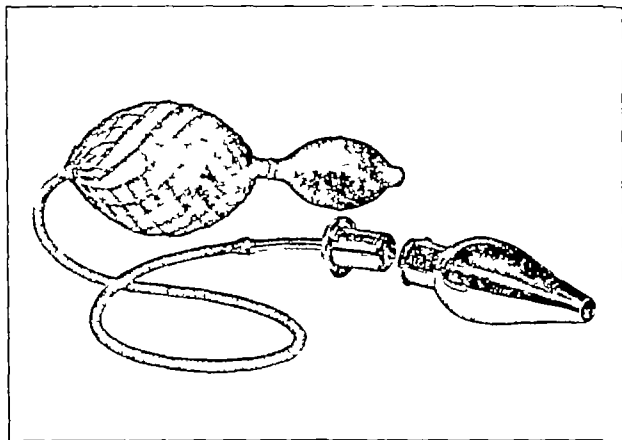
Read before the St. Louis Medical Society, Feb. 14, 1933. The acetarsone (Stovarsol) used in this work was supplied by Merck & Co.

From the Department of Obstetrics and Gynecology, Washington University School of Medicine.

<sup>1</sup> New and Nonofficial Remedies, Chicago: American Medical Association, 1930, p. 81.  
<sup>2</sup> Maxwell, C. H., Jr., and Glaser, Jerome: Treatment of Congenital Syphilis with Acetarsone (Stovarsol) Given by Mouth, *Am. J. Dis. Child.* 43: 1461 (June) 1932 (with extensive review of the literature).

erties when used locally? My first attempt along this line was highly encouraging, further trials followed, and, finally, a definite technic was evolved which has now been in use for more than eleven months. The preparation used is a compound of a light white powder which contains 12.5 per cent of acetarsone in equal parts of kaolin and sodium bicarbonate. The standard dose is 1 teaspoonful which contains  $7\frac{1}{2}$  grains (0.5 Gm.) of the drug.<sup>3</sup> It is introduced into the vagina by means of a specially designed powder blower, the construction of which is shown in the accompanying illustration. When the metal bulb is firmly held against the vaginal entrance, air pressure will smooth out all the folds and crevices, distend the vagina maximally and, at the same time, distribute the powder over the entire mucosa. As a rule from six to eight compressions of the rubber bulb suffice to empty the reservoir. Between each two compressions there should be a short pause, first to let the powder settle and, second, to let the air escape.

The treatment is repeated every second or third day. Douches are not permitted at any time. The subjective effect is very rapid. Patients almost invariably declare that after the first treatment the intense burning is lessened. Objective improvement follows with little delay in the majority of cases. After the second or third treatment, the discharge is reduced in amount and changed from the original thin yellow to a whitish more mucoid consistency. After the third or fourth treatment, the discharge disappears altogether. Of course there are some



Powder blower for distributing acetarsone compound over mucosa of vagina.

obstinate cases that require one or two additional treatments. Never have any toxic effects, local or systemic, been observed.

All writers on the subject of trichomonas vaginitis have emphasized the frequency of recurrences. The fact that, in the two cases of this sort which I have observed, the discharge reappeared after four months of perfect well-being makes me suspect that I was dealing with a reinfection rather than a recurrence. To judge from the literature and my own observations, such reinfections not infrequently seem to follow an intestinal upset and be aggravated by an intervening menstruation. The latter, therefore, should not be permitted to interrupt the treatment. In fact, I have not only continued the procedure throughout the period but doubled the amount of acetarsone during that time.

Acting on the supposition of the intestinal origin of trichomonas vaginitis, I have also given acetarsone by mouth as an attempt at prophylaxis but have not yet reached any conclusion as to its value. Rectal injections with acetarsone might be advisable in patients with a history of trichomonas vaginitis but with this I have had no personal experience.

The success obtained with insufflation of acetarsone proves that the principle of powder treatment is far superior to that of douching in trichomonas vaginitis. Others have come to the same conclusion, for instance, Sure and Bercey.<sup>4</sup> It may

also be possible that other powders will exert a curative effect in this particular form of vaginitis. I refer to the bismuth compounds because the pediatricians use them with success in a certain form of infantile colitis or proctitis in which large numbers of trichomonads are found.

My object in this paper is twofold: (1) to stress the advantages of the dry over the moist treatment in trichomonas vaginitis, (2) to call attention to the exceptional advantages of acetarsone in this condition.

Metropolitan Building

## Council on Pharmacy and Chemistry

### NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

**CALCIUM GLUCONATE** (See New and Nonofficial Remedies, 1933, p. 129)

**Calcium Gluconate-Merck**—A brand of calcium gluconate N. N. R.

Manufactured by Merck & Co. Inc., Rahway, N. J. No U. S. patent or trademark.

**PHENOBARBITAL SODIUM** (See New and Nonofficial Remedies, 1933, p. 96)

**Phenobarbital Sodium-Merck**—A brand of phenobarbital sodium-N. N. R.

Manufactured by Merck & Co. Inc., Rahway, N. J. No U. S. patent or trademark.

**LIPIODOL-LAFAY** (See New and Nonofficial Remedies, 1933, p. 232)

The following dosage forms have been accepted:

**Capsules** *Lipiodol Lafay* 0.5 Gm. Each gelatin capsule contains lipiodol Lafay equivalent to 0.2 Gm. of iodine.

**Dosage** Two to five capsules daily after meals.

**Tablets** *Lipiodol Lafay* Each tablet contains a calcium salt of the iodized fatty acids of lipiodol Lafay 0.1 Gm. (equivalent to 0.04 Gm. of iodine) incorporated in a base composed of sugar, acacia and cacao, and flavored with vanilla.

**Dosage** Two to five tablets daily.

**SODIUM MORRHUATE**—The sodium salt of the unsaturated fatty acids occurring in cod liver oil.

**Actions and Uses**—The action of sodium morrhuate is that of a sclerosing agent. It is employed in solution with addition of a local anesthetic for the obliteration of varicose veins.

**Dosage**—One half to 1 cc. of a 5 per cent solution.

Sodium morrhuate is a pale, yellowish granular powder possessing a slight fishy odor. It is soluble in water.

Incinerate about 1 Gm. of sodium morrhuate; the residue responds to test for sodium carbonate. Dissolve about 0.01 Gm. of sodium morrhuate in 10 cc. of water, add 1 cc. of chloroform followed by one drop of sulphuric acid and shake; a violet red color results, gradually changing to a reddish brown.

Dry about 1 Gm. of sodium morrhuate accurately weighed at 100 C. for six hours; the loss does not exceed 2 per cent. Weigh accurately about 1 Gm. of sodium morrhuate in a tared platinum dish, add 10 cc. of sulphuric acid, gently heat while fumes of sulphur trioxide are evolved; repeat using two portions of 2 cc. of sulphuric acid respectively; ignite, cool and weigh as sodium sulphate; the sodium found corresponds to not less than 7 per cent nor more than 7.8 per cent when calculated to the dried substance.

Transfer about 25 Gm. of sodium morrhuate to a suitable Squibb separatory funnel, add 350 cc. of water and sufficient diluted sulphuric acid to precipitate the fatty acids and extract with 3 portions of ether, using 150 cc. 100 cc. and 50 cc. respectively. The combined ethereal solutions evaporated to an oily liquid on the steam-bath conform to the following requirements:

Morrhucic acid, a component of sodium morrhuate, responds to the following tests for identity, purity and assay. Morrhucic acid occurs as a light amber oily liquid possessing a slight fishy odor and taste, soluble in alcohol, carbon tetrachloride, chloroform and ether, practically insoluble in water. The specific gravity is 0.898 to 0.907 at 25 C.

Incinerate about 0.5 Gm. of morrhucic acid accurately weighed; the residue does not exceed 0.2 per cent. Dissolve about 0.1 Gm. of morrhucic acid accurately weighed in a dry 500 cc. glass stoppered flask, add 10 cc. of chloroform, followed by the addition of 25 cc. of iodochloride test solution (Wijs modification), accurately measured, stopper the flask and allow to stand for thirty minutes in a cool place.

<sup>3</sup> A practical prescription for the compound when only small quantities are needed is: acetarsone 1 drachm (4 Gm.), kaolin  $3\frac{1}{2}$  drachms (14 Gm.), sodium bicarbonate  $3\frac{3}{4}$  drachms (14 Gm.).

<sup>4</sup> Sure, J. H. and Bercey, J. E. *Am. J. Obst. & Gynec.* 25: 136 (Jan.) 1933.

protected from light To the mixture add 20 cc. of a 15 per cent solution of potassium iodide mix thoroughly add 200 cc of water previously boiled and cooled and titrate the excess of iodine with tenth normal sodium thiosulphate solution using starch paste as an indicator While the foregoing is being performed make a control test by using exactly the same quantities of reagents and titrate the free iodine with tenth normal sodium thiosulphate solution the amount of tenth normal sodium thiosulphate solution consumed corresponds to an iodine value of not less than 145 and not more than 185

Dissolve about 1 Gm of morrhuae acid, accurately weighed in 50 cc. of alcohol and titrate with tenth normal potassium hydroxide solution using phenolphthalein as an indicator the amount of tenth normal potassium hydroxide solution consumed corresponds to a neutralization value which should not be less than 188 and not more than 198

Digest about 5 Gm of morrhuae acid under a reflux condenser with a solution of about 2 Gm of potassium hydroxide in 40 cc. of alcohol for an hour or until saponified Evaporate most of the alcohol dissolve the residue in 50 cc. of hot water transfer the solution to a separatory funnel rinsing the flask with 25 cc. to 50 cc. of hot water cool extract with ether using 2 portions of 50 cc each adding if necessary about 5 cc of alcohol to facilitate the separation of two liquids wash the combined ether extraction with small portions of water until not reddened by phenolphthalein transfer the ethereal solution to a tared beaker evaporate the ether on a water bath dry the residue at a temperature not exceeding 100 C and weigh the unsaponifiable matter does not exceed 1.5 per cent

*Ampule Sodium Morrhuate 5% with Benzyl Alcohol (Searle)*  
5 cc Each cc. contains 0.05 Gm. sodium morrhuate and benzyl alcohol 0.02 Gm in aqueous solution

Prepared by G D Searle & Co Chicago No U S patent or trademark.

**DEXTROSE** (See New and Nonofficial Remedies, 1933, p 267)

The following dosage forms have been accepted

*Ampule Glucose (U S P Dextrose) Solution 20 cc size* A solution prepared by dissolving anhydrous dextrose in the proportion of 9 Gm (equivalent to 10 Gm. dextrose-U S P) to 20 cc of sterile distilled water

Prepared by Lederle Laboratories Inc. Pearl River N Y

*Ampule Glucose (U S P Dextrose) Solution 50 cc size* A solution prepared by dissolving anhydrous dextrose in the proportion of 22.5 Gm (equivalent to 25 Gm. dextrose-U S P) to 50 cc of sterile distilled water

Prepared by Lederle Laboratories Inc. Pearl River N Y

*Ampule Glucose (U S P Dextrose) Solution 100 cc size* A solution prepared by dissolving anhydrous dextrose in the proportion of 45 Gm (equivalent to 50 Gm dextrose U S P) to 100 cc. of sterile distilled water

Prepared by Lederle Laboratories Inc. Pearl River N Y

## REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH Secretary

### D C P 340 NOT ACCEPTABLE FOR N N R

According to a circular and form letter forwarded by a physician to the Council, D C P 340 is the name under which Parke, Davis & Company markets a preparation of dicalcium phosphate. Firms which have had dealings with the Council as long as Parke, Davis & Company are well aware of the Council's sound objections to the use of letters and numerals for, or in connection with, the names of medicinal products. The menace of such nomenclature to rational and intelligent therapy is too obvious to need further emphasis. It is indeed regrettable that a house of the standing long enjoyed by Parke, Davis & Company should be launching a preparation under such auspices. The facts that the letters are taken (apparently as a sort of slang abbreviation) from the chemical name of the product and that the number represents the mesh through which the preparation is sifted can hardly be pleaded in extenuation.

The product is apparently intended to exploit the current interest in calcium-phosphorus therapy or prophylaxis. The circular states "Bloom has demonstrated clinically that dicalcium phosphate is a well utilized calcium phosphate compound." Bloom's paper does not bear critical analysis as evidence for the clinical value of secondary calcium phosphate and since it is apparently the sole clinical evidence, the value of this therapy, not to mention the advantage of the secondary calcium phosphate over the tertiary, cannot be considered as being established. The circular cites the work and opinion of Sherman in support of the thesis that "the average American dietary is actually low in both of the factors [calcium and phosphorus]." The Council has held that this thesis is by no means established, New and Nonofficial Rem-

edies, 1933 p 129, states "The average normal diet usually contains just about enough calcium for the needs of the body."

Although in the circular the claim for the use of D C P 340 as a routine measure to insure adequate calcium intake is not explicitly stated, the inference of its value is clearly indicated in the light of present knowledge the claim is unwarranted. While there may be a place in medicine for the use of dicalcium phosphate in some conditions of recognized deficiency there is certainly no place in rational and scientific therapy for a preparation marketed under such a name as D C P 340.

The Council declared D C P 340 unacceptable for New and Nonofficial Remedies because it is a preparation marketed under an uninformative name with unwarranted claims of therapeutic or prophylactic value.

### NIAZO NOT ACCEPTABLE FOR N N R

Niazo is the name applied by the Schering Corporation New York to a diazotized pyridine compound, stated to be 2-butyl-oxy-azo-2,6-diamino pyridine and recommended for use as a urinary antiseptic in the treatment of acute and chronic gonorrheal diseases and other bacterial infections of the urinary tract. In 1931, in accordance with the report of its Committee on Nomenclature, the Council voted to recognize the name Niazo, provided the Schering Corporation secure consent of the discoverer (or discoverers) and provided he (or they) do not authorize the use of any other name in the United States. Subsequently the Council adopted the referee's report holding on the basis of the clinical and pharmacologic evidence submitted by the firm, that Niazo was unacceptable because the therapeutic claims advanced for the product were not supported by adequate evidence and because unaccepted products were named in the advertising. At the request of the firm the Council agreed to postpone publication of the report to await new evidence.

In a later report, in April, 1932, the referee reviewed and analyzed all the available evidence on the efficacy of Niazo and concluded that the evidence supported the opinion that, because of its antibacterial adjuvant action Niazo has some value as a urinary antiseptic. The Council adopted the referee's recommendation that Niazo be accepted for one year provided the firm agree (1) to omit claims for general or specific bactericidal action in urine excreted after oral ingestion of Niazo (2) to omit claims for penetration of tissues (3) to omit claims for analgesic action (4) to limit claims for antiseptic action to bacteriostatic effects (5) to emphasize the fact that Niazo is chiefly valuable as an adjuvant agent in the treatment of infections of the urinary tract (6) to discontinue distribution of all advertising material for Niazo containing claims in conflict with these conditions and to submit all advertisements, labels and pamphlets on Niazo to the Council before issuing them and (7) provided further, that the A M A Chemical Laboratory report favorably on the composition, tests and standards for Niazo.

This report was forwarded to the firm (April 28 1932) and in reply the firm agreed to comply with these conditions.

An advertisement of Niazo accompanied by a reprint of a paper by Dr Carl Rusche (*Am J Surg* 15 545 [March] 1932) was circulated among physicians by the firm in June 1932. In this advertisement it was claimed that Niazo was a "mainstay adjuvant" and a "valuable bacteriostatic aid in the treatment of genito-urinary infectious conditions." On the card sent to physicians Niazo was described as the new effective treatment for infections of the urinary tract. The firm's explanation of the issuance of this advertisement while Niazo was under consideration by the Council has been accepted.

The referee has again reviewed the evidence on the value of Niazo as a urinary antiseptic. During the past year, no new favorable evidence has been published, except the paper by Dr Rusche referred to. This paper, which was reviewed previously in manuscript, does not make extravagant claims for Niazo but does not justify the conclusions drawn from it. The Council decided to withdraw the limited conditions under which Niazo might be accepted for one year and voted to declare Niazo unacceptable for inclusion in New and Nonofficial Remedies because the available evidence does not show it to be an effective urinary antiseptic.

## Committee on Foods

### GENERAL COMMITTEE DECISION

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISION ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING

RAYMOND HERTWIG Secretary

### THE IDEAL LABEL FOR FOODS

The container label of foods should conspicuously present such information as will properly inform the public of the true nature and quantity of the food within the package. The public deserves to know the ingredients of the foods it purchases. There are no sound arguments justifying secrecy on the composition of foods. Label identification of foods is a most cogent influence for prevention of incorrect, deceptive or fraudulent advertising apart from the package container. A properly informative label lays the basis for good sound advertising, the only kind of advertising the public or the food industry can permit in its own interest.

Accepted foods among other things are intended to serve as examples of foods properly labeled in the interest of the public and of the food industry as a whole. As such examples they militate for the adoption of properly labeled foods throughout the food field and of good equitable advertising and competitive practices.

An illustrative diagram of an ideal food label is presented for the guidance of food manufacturers and represents the type of label the public expects in its own welfare.

IDEAL LABEL FOR FOODS (Skeleton outline for main panel faces)	
COMMON NAME OF FOOD	
Example	* (Statement of added minor ingredients)
	RICE FLAKES
	* (Flavored with sugar, malt and salt)
—OR—	
FANCIFUL TRADE NAME	
Example	* (Descriptive statement identifying ingredients)
	BLANCO
	* (Sugar dried fruit eggs and milk)
Additional information of a special character	
NET CONTENTS	
NAME OF MANUFACTURER, PACKER OR DISTRIBUTOR	
*Note: Ingredients arranged in order of decreasing proportions	

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

### JELKE GOOD LUCK CHOCOLATINE SPREAD

*Manufacturer*—John F. Jelke Company, Chicago

*Description*—Mixture of coconut oil, chocolate syrup (containing sucrose, cocoa, chocolate, salt, vanilla and tartaric acid), hydrogenated vegetable oil, whole milk, cottonseed oil and a stearin-glycerin derivative.

*Manufacture*—The manufacture is essentially the mixing of vegetable fats and inoculated milk with a chocolate flavored syrup containing sucrose, cocoa, chocolate, salt, vanilla and tartaric acid and a small quantity of emulsifying agent—a glycerin stearin derivative. The ingredients are softened in a blending machine. 0.5 per cent of the emulsifying agent is added

and mixed in, the chocolate syrup is added and mixed in. After the mixture is thoroughly blended, a small quantity of vanilla extract is added. The final mixture is stored in a cooling room for from twelve to sixteen hours to set firmly, after which it is printed in blocks and allowed to stand another twelve to sixteen hours before wrapping.

The manufacture is under government inspection.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	15.6
Ash	1.0
Sodium chloride (NaCl)	0.7
Fat (ether extract)	52.0
Protein (N × 6.25)	1.9
Reducing sugars as dextrose	9.7
Sucrose (copper reduction method)	11.6
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	28.9
Caffeine	0.01
Theobromine	0.21

*Calories*—5.9 per gram 168 per ounce

*Claims of Manufacturer*—The product is for use as a spread for bread, as shortening and icing in baking, and as an ingredient in appropriate recipe preparations.

### PROTEO BREAD

(MADE FROM GLUTEN, WHOLE WHEAT AND SOY BEAN FLOURS, WITH OTHER NUTRIENTS)

*Manufacturer*—Holsum Bakery Company, Fort Wayne, Ind.

*Distributor*—Proteo Foods, Inc., Chicago

*Description*—A bread for carbohydrate restricted diets containing water, gluten, soy bean and whole wheat flours, skim milk, yeast, fat, egg casein, salt, calcium acid phosphate and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, prepared by the straight dough method (method described in THE JOURNAL, March 12, 1932, p. 889).

*Analysis* (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	38
Ash	3.0
Fat	8.0
Protein (N × 6.25)	24.1
Reducing sugar as dextrose	2.5
Sucrose	0.0
Starch (diastase method)	16.0
Dextrins (acid hydrolysis)	2.0
Pentosans	2.2
Crude fiber	1.3
Carbohydrates available	20.5
Carbohydrates available and nonavailable other than crude fiber (by difference)	25.8
Calcium (Ca)	0.21
Phosphorus (P)	0.39
Iron (Fe)	0.005

*Calories*—2.7 per gram 77 per ounce.

Caloric value per 100 grams bread	
Carbohydrates (available)	80
Fat	72
Protein	96

*Claims of Manufacturer*—Especially prepared for carbohydrate restricted diets, lower in carbohydrates and higher in minerals (calcium, phosphorus and iron) than ordinary breads. The protein has high biologic value.

### INTERNATIONAL TABLE SALT (IODIZED) PURITY TABLE SALT (IODIZED)

*Manufacturer*—International Salt Company, New York City

*Description*—Table salt containing added calcium carbonate (less than 1 per cent), sodium bicarbonate (less than 0.1 per cent) and potassium iodide (0.02 per cent).

*Manufacture*—International Free Running Salt (THE JOURNAL, July 2, 1932, p. 34) is admixed in a batch mixer with the stated proportions of calcium carbonate, sodium bicarbonate, and potassium iodide, and automatically packed in cartons.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	0.0
Iron oxide (Fe <sub>2</sub> O <sub>3</sub> )	absent
Barium sulphate (BaSO <sub>4</sub> )	absent
Calcium sulphate (CaSO <sub>4</sub> )	0.55
Calcium hydroxide (Ca(OH) <sub>2</sub> )	0.00
Magnesium chloride (MgCl <sub>2</sub> )	0.02
Sodium chloride (NaCl) (by difference)	98.43
Potassium iodide	0.02
Sodium bicarbonate	0.08
Calcium carbonate	0.90

*Claims of Manufacturer*—This iodized salt is for all table and cooking uses of salt. The sodium bicarbonate tends to prevent loss of iodine; the calcium carbonate tends to pre-

serve its free running qualities. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element and thus helps to protect against goiter.

### DOLE HAWAIIAN FINEST QUALITY PINEAPPLE JUICE (Unsweetened)

PARADISE ISLAND BRAND

DIAMOND HEAD BRAND

HONEY DEW BRAND

SWEET TREAT BRAND

*Manufacturer*—Hawaiian Pineapple Company, Ltd., San Francisco

*Description*—Hawaiian pineapple juice retaining in high degree the natural vitamin content of the raw pineapple.

*Manufacture*—The pineapple juice is obtained from two pineapple sources in the preparation of canned pineapple: (1) the 'Ginaca' machines and (2) the cooking kettles (see announcement of acceptance for Dole Hawaiian Finest Quality Pineapple (THE JOURNAL, April 8 1933, p. 1106).

The juice is expressed from the shredded fruit, heated to 60 C by passing through a tubular heater centrifugated to remove suspended matter, filled into cans which are sealed under 'vacuum' heated in a cooker (88 C) for less than ten minutes and promptly cooled. The heating time is reduced to a minimum to retain the natural flavor to maximum degree. Acid proof equipment is used.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	85.3
Ash	0.4
Fat (ether extract)	0.3
Protein (N $\times$ 6.25)	0.3
Reducing sugars as invert.	8.6
Sucrose (copper reduction method)	3.7
Crude fiber	0.02
Carbohydrates (by difference)	12.8
Titrateable acidity as citric acid	0.9
Calcium (Ca)	0.02
Iron (Fe)	0.0005
Copper (Cu)	0.00017
Magnesium (Mg)	0.02
Manganese (Mn)	0.0003

*Calories*—0.6 per gram 17 per ounce

*Vitamins*—The heating of the juice prior to centrifugating, and the sealing under vacuum reduces incorporated air; the heating time is short and the temperature low. These factors favor protection of the vitamins.

*Claims of Manufacturer*—For all uses of pineapple juice, largely retaining the natural nutritional values of raw pineapple (vitamin C slightly reduced). A good source of vitamins A, B and C.

### AMAESSA FLOUR

*Manufacturer*—Texas Star Flour Mills Galveston Texas

*Description*—An 'all purpose' hard winter wheat patent flour

*Manufacture*—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL June 18 1932 page 2210. Chosen flour streams are blended.

*Claims of Manufacturer*—This flour is designed for home baking.

### PFIZER SODIUM CITRATE U S P (VIII)

### PFIZER SODIUM CITRATE U S P (X)

*Manufacturer*—Charles Pfizer and Company, Inc. New York City

*Description*—Sodium citrate U S P (VIII) ( $2\text{Na}_2\text{C}_6\text{H}_5\text{O}_7 \cdot 11\text{H}_2\text{O}$ ) and U S P (X) ( $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7 \cdot 2\text{H}_2\text{O}$ )

*Manufacture*—U S P (VIII) Citric acid U S P and sodium bicarbonate in definite proportions are dissolved in water. The solution is heated, filtered, adjusted to a definite  $pH$  value, cooled and stirred until the crystallized sodium citrate is ready to be spun free from the mother liquor in a centrifuge. The crystals are washed with dilute citric acid solution and air dried at slightly above room temperature.

U S P (X) The manufacture is the same as that for U S P (VIII) excepting that a somewhat more concentrated solution is used and the crystallization occurs at a higher temperature.

*Analysis* (submitted by manufacturer) —

	per cent
U S P VIII	
Water of crystallization	27.7
Ash	44.5
Fat, protein, sugars	0.0
Sodium citrate ( $2\text{Na}_2\text{C}_6\text{H}_5\text{O}_7 \cdot 11\text{H}_2\text{O}$ ) not less than	99.5
U S P X	
Water of crystallization	12.3
Ash	53.7
Fat, protein, sugars	0.0
Sodium citrate ( $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7 \cdot 2\text{H}_2\text{O}$ )	99.0

*Calories* (submitted by manufacturer) —

U S P VIII	13 per gram	37 per ounce.
U S P X	16 per gram	45 per ounce.

(International. Critical Tables 5 166)

*Claims of Manufacturer*—For use as emulsifier in cheese, as homogenizer in ice cream and whipping cream for adjusting the  $pH$  of food preparations, and for similar purposes.

### SCOTCH BRAND PEARLED BARLEY

*Manufacturer*—The Quaker Oats Company, Chicago

*Description*—Pearled barley practically free of barley bran

*Manufacture*—Sound stain free barley is cleaned to remove chaff, weed seed and foreign matter and is pearled down to the size desired in a special pearling mill which removes the hulls and bran by scouring the barley between the peripheral surface of a revolving circular stone and the counter-moving perforated wall of the machine. The pearled barley is separated from the flour, bran and hulls by air separators. The clean, pearled product is sized and automatically packed in cartons.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	9.9
Ash	0.7
Fat (ether extraction method)	0.7
Protein (N $\times$ 5.83)	9.4
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	78.8

*Calories*—3.6 per gram 102 per ounce

### FISHERS RYE FLOUR

*Manufacturer*—The Fisher Flouring Mills Company, Seattle

*Description*—A rye flour milled from Eastern dark rye, approximately 90 per cent of the grain.

*Manufacture*—The rye is cleaned, milled and about 10 per cent of the coarse material of grain removed.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	11.3
Ash	1.6
Fat (ether extraction method)	1.9
Protein (N $\times$ 5.7)	13.2
Crude fiber	2.1
Carbohydrates other than crude fiber (by difference)	70.0

*Calories*—3.5 per gram 99 per ounce

*Claims of Manufacturer*—For bread baking.

### QUAKER BRAND PUFFED WHEAT

*Manufacturer*—The Quaker Oats Company, Chicago

*Description*—Ready-to-eat cooked and puffed durum wheat.

*Manufacture*—Durum wheat is cleaned, scoured, cooked and steamed in a closed vessel called a gun. When the desired pressure has been reached, the lock that seals the gun is quickly withdrawn and the door is forced open by the internal steam pressure. The quick release of pressure causes a sudden conversion into vapor of the moisture within the wheat and puffs it to light porous grains. The wheat is screened, dried to 2 per cent moisture content, and packed in paraffin paper bags in cartons.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	2.0
Ash	1.4
Fat (ether extraction method)	1.5
Protein (N $\times$ 6.25)	16.4
Crude fiber	2.0
Carbohydrates other than crude fiber (by difference)	76.7

*Calories*—3.9 per gram 111 per ounce.

*Claims of Manufacturer*—The wheat is steam exploded to eight times normal size.



an injurious influence on cardiac function, the heart, once enlarged, is already on its way to eventual failure." It may be recalled that, in dogs, hypertrophy due to aortic insufficiency occurs more quickly and to a greater degree in young than in old animals,<sup>8</sup> and that the degree of hypertrophy in dogs killed from 145 to 500 days after the lesion has been produced is no greater than in those killed after from thirty to sixty days of aortic leakage. In many patients, similar phenomena occur, these have been concisely summarized by Lewis,<sup>1</sup> who concludes that hypertrophy due to overwork "does not constitute disease, it is physiological." He feels that while the overburdened heart fails rapidly, once failure occurs, the underlying cause is a change in the muscle "usual with advancing years, or associated with intercurrent infection, we do not as yet know with any degree of finality."

The practitioner who tries to analyze his own experience will not forget the psychic factor. Christian's patients who expected to feel better after taking fox-glove felt better, but Stewart and Cohn's<sup>8</sup> normal subjects, who knew that their cardiac output was reduced by the drug, experienced weakness and one third were dyspneic. Cardiac enlargement, hypertension or organic heart disease may be said to justify continued digitalis therapy for patients who expect medicine. Doses just under the toxic level can be taken for years without harm, and when the change in muscle occurs and failure sets in the heart is under the influence of the drug. If, as is generally believed, digitalis has power to benefit some cases of failure with regular rhythm, it should be more effective when given early. Yet a sound basis exists for the skepticism of those who refuse to put patients to the trouble and expense of years of medication while still in good health. They may well prefer to reserve the drug until symptoms are clear cut and their response to medication can serve as an index of the drug's effectiveness in each patient. Christian likens digitalis in patients with heart disease to thyroid in myxedema or to liver extract in primary anemia. These specifics are not given, however, until symptoms are apparent, even though they are continued throughout life thereafter. Moreover, patients with myxedema or primary anemia do not die of their disease if they receive early and continuous therapy, while many patients with congestive failure die in spite of early and adequate treatment with digitalis. This drug is not a specific, it is a valuable medicament which may safely be given early and continued through life. It can be withheld until symptoms warrant its trial. Should its continued use, before symptoms appear, become a generally accepted practice, the dramatic spectacle of its action in untreated cases of heart disease might no longer impress us, but some patients would enjoy longer freedom from congestive failure.

## KIDNEY IMPAIRMENT AND EDEMA

When the kidneys cease to function adequately, a series of untoward symptoms ensue, followed inevitably by death. The immediate cause of death has not been established. If the different factors involved as a result of renal insufficiency were more clearly determined, it might be more readily possible to combat those which are most menacing and thereby prolong life or avert disaster. When the work of the kidneys is sufficiently impaired, a retention of waste products, notably the nitrogenous compounds commonly excreted in the urine, is certain to ensue. But this is by no means the only adverse situation that may arise. Edema and its attendant distressing manifestations also are common symptoms. However, there is considerable evidence that the edema of so-called acute nephritis does not necessarily depend on the kidneys. Complete nephrectomy is by no means always followed by edema. When lesions morphologically identical with those of acute Bright's disease are produced by certain toxic agents edema does not regularly occur. Thus it early became probable that a tissue factor, rather than a purely renal one, may play the decisive part in the genesis of edema. Widal and his followers assigned it to retention of sodium chloride.

The fundamental features under consideration here can be reproduced experimentally in animals by double nephrectomy. Under such conditions Brown-Sequard<sup>1</sup> years ago concluded that the accumulation of the nitrogenous waste products was not the only factor responsible for the appearance of uremic symptoms, the disturbance of the "internal secretion" of the kidney being a more powerful and active factor. Others subsequently gave some adherence to this early vague endocrine hypothesis, but it has not survived the tests of time. Many investigators have been surprised by the absence of edema in some species. For example, Allen, Scharf and Lundin,<sup>2</sup> in a report of a study of experimental nephritis, stated that total nephrectomy produces a condition which in dogs is acutely fatal, generally within a few days. Nitrogen retention and acidosis are demonstrable, but death occurs from weakness without edema, hypertension or any of the clinical phenomena of nephritis. The explanation seems now to be clear. Nephrectomized dogs begin to vomit on the second or third day, and diarrhea soon follows, which leads to dehydration and loss of chlorides. If this is prevented by injection of Ringer's solution, which supplies water and chlorides, life is prolonged, as has been clearly demonstrated by Lyon, Shafton and Ivy<sup>3</sup> of Chicago.

Conceivably the development of edema in extreme renal insufficiency may serve to dilute the "toxins" or

<sup>8</sup> Stewart H. J. and Cohn A. E. The Effect of Digitalis on the Output of Blood From the Normal Human Heart. *J. Clin. Investigation* 11: 917 (Sept.) 1932.

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# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 3, 1933

## THE CONTINUED USE OF DIGITALIS IN PATIENTS WITH REGULAR RHYTHM

Foxglove has been given a critical trial by physicians for 158 years, yet a definite solution has not been found for two questions concerning its use. When should the drug be started, and how long continued in patients with heart disease who have regular rhythm? Even British cardiologists, long skeptical of its use except in auricular fibrillation, now grant that it seems occasionally to benefit congestive failure in such cases. But Lewis,<sup>1</sup> in his recent book on heart disease, deprecates giving digitalis in heart cases "merely because they are heart cases." He states that there is no evidence that digitalis, in doses up to 13 cc of the tincture daily, affects the progress of congestive failure, with regular rhythm, at any stage in the course of the disease. This opinion, from one who has had notable success in elucidating clinical problems by experimental methods, is based wholly on his clinical experience. Lewis scarcely refers to the use of the drug in his consideration of treatment of hypertension or of arteriosclerotic or valvular heart disease, he is content with clear instructions for its administration and continuation in auricular fibrillation, and for its trial, in the largest tolerated dose, in congestive failure.

Another view has been originated by a pharmacologist<sup>2</sup> who mentions patients between 50 and 60 years of age, with early signs of cardiac failure, "who retain for a long time excellent heart function by constant treatment with digitalis. As soon as digitalis is discontinued for two weeks, symptoms of cardiac insufficiency make their appearance." This view is warmly supported by Christian,<sup>3</sup> who advises continuous digitalis medication (from 0.2 to 0.3 Gm of leaf daily, lower doses if toxic symptoms appear) in all cases of cardiac enlargement or in cases presenting hypertension or valvular heart disease in which cardiac enlargement may be antici-

pated. The pharmacologist has quoted clinical observation to support this mode of therapy, while the clinician, confronted with the difficulty of supplying adequate clinical evidence in the form of statistics of survival in comparable cases of early heart disease with and without digitalis therapy, has relied largely on animal experimentation.

Cloetta<sup>4</sup> had interpreted his rabbit experiments of twenty-five years previously as indicating that continued digitalis medication of normal animals had no effect on heart weight. When experimental aortic insufficiency was present, however, hypertrophy was much less in the treated animals. Ignoring the loss of weight and the lassitude of animals treated with large doses of digitalis, he ascribed this to the cardiac action of the drug. Referring to this work later, he<sup>5</sup> not only emphasized the prevention or retardation of hypertrophy in rabbits with experimental valve lesions but intimated that digitalis decreases the heart weight of normal animals. Meanwhile, Herrmann<sup>6</sup> had published his data on heart weight in 200 normal dogs and 70 with experimental aortic insufficiency, which showed how variable is the degree of hypertrophy produced by these lesions. In the light of this work Cloetta's experiments seem inconclusive, although his conclusion may be confirmed or disproved by experiments on adequate material and with doses of digitalis that do not interfere with nutrition or activity. While it cannot be regarded as proved that digitalis retards hypertrophy, there is ample proof that even in normal animals and men it diminishes cardiac work and diastolic heart volume and that, in experimentally damaged hearts, it probably "reduces the energy requirement of the heart or permits it to do more work with the same expenditure of energy."<sup>6</sup> The evidence for this action, obtained by pharmacologists in England, Holland and Germany, has been fully confirmed by Cohn and his co-workers at the Rockefeller Institute. Convincing evidence that digitalis reduces heart volume of intact animals with normal or with damaged hearts came originally from Christian's clinic<sup>7</sup> and it is now generally accepted. Dilatation is everywhere regarded as the precursor and cause of hypertrophy, and a drug that diminishes dilatation should retard hypertrophy. Christian is probably justified in his belief that digitalis is a cardiac "lubricant," or increaser of heart efficiency, and that it may be useful throughout life in those subject to excessive heart muscle strain.

Christian and Lewis also differ in regarding work and cardiac hypertrophy, in their relation to heart failure, from different angles. One<sup>3</sup> states that "cardiac hypertrophy, instead of being a beneficent process, is

<sup>1</sup> Lewis, Thomas. *Diseases of the Heart*, New York. Macmillan Company 1933. pp. 29, 154, 155.

<sup>2</sup> Cloetta, Max. The Biochemical Action of Digitalis. *J. A. M. A.* 93: 1462 (Nov. 9) 1929.

<sup>3</sup> Christian, H. A. The Use of Digitalis Other Than in the Treatment of Cardiac Decompensation. *J. A. M. A.* 100: 789 (March 18) 1933.

<sup>4</sup> Cloetta, Max. Ueber den Einfluss der chronischen Digitalisbehandlung auf das normale und pathologische Herz. *Arch. f. exper. Path. u. Pharmacol.* 59: 209 1908.

<sup>5</sup> Herrmann, G. R. Experimental Heart Disease, *Am. Heart J.* 1: 213 (Jan.) 485 (April) 1926.

<sup>6</sup> The Action of Digitalis in Heart Failure. editorial. *J. A. M. A.* 93: 548 (Aug. 17) 1929.

<sup>7</sup> Strong, G. F. and Gordon, Burgess. Effect of Strophanthin on Size of Normal and of Abnormal Rabbit Heart. *Arch. Int. Med.* 32: 510 (Oct.) 1923.

an injurious influence on cardiac function, the heart, once enlarged, is already on its way to eventual failure." It may be recalled that, in dogs, hypertrophy due to aortic insufficiency occurs more quickly and to a greater degree in young than in old animals,<sup>5</sup> and that the degree of hypertrophy in dogs killed from 145 to 500 days after the lesion has been produced is no greater than in those killed after from thirty to sixty days of aortic leakage. In many patients, similar phenomena occur, these have been concisely summarized by Lewis,<sup>1</sup> who concludes that hypertrophy due to overwork "does not constitute disease, it is physiological." He feels that while the overburdened heart fails rapidly, once failure occurs, the underlying cause is a change in the muscle "usual with advancing years, or associated with intercurrent infection, we do not as yet know with any degree of finality."

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other harmful retained components and thereby render them less noxious. Investigations at the Northwestern University Medical School in Chicago by Barry, Shaf-ton and Ivy<sup>4</sup> indicate that the prolongation of life is due primarily to maintenance of the normal water-sodium chloride balance in the body, and not to a dilution by edematous fluid of the urinary or toxic substances retained. The retention of urinary products per se in the presence of hypochloremia (chiefly sodium chloride) is not conducive to edema, even when adequate water is supplied, this confirms the contention of Widal. In order to obtain a retention of water adequate to prevent dehydration sufficient sodium chloride must be given to prevent hypochloremia, if an excess is given, edema results. The Chicago physiologists point to the important role assumed by sodium chloride and the rather minor role of water and the products of nitrogenous retention in the production of edema. In the presence of marked nitrogenous retention, water in "balanced" amounts is not retained in the body if the blood chlorides are subnormal. By keeping the intake of water constant and controlling the intake of sodium chloride, one can control the presence or absence of edema.

### MELANOGENESIS

Pigmentation of the melanin type has long been known as a manifestation of both normal and pathologic conditions in man, yet our knowledge of its origin remains indefinite. It has seemed unlikely that cells which do not normally form melanotic pigment can acquire the power to produce the characteristic coloration under pathologic conditions. The appearance of the pigmentation in freckles, in melanotic tumors, and perhaps in Addison's disease, has been attributed to the overproduction of the coloring substance by cells that are ordinarily capable of producing it. The old theories of its origin from hemoglobin, the respiratory pigment of the blood, have been abandoned. Among the more recent views is that of Bruno Bloch,<sup>1</sup> who found that the occurrence of melanin in the skin corresponds to the location of cells with the capacity of oxidizing di-oxyphenylalanine. This has been termed the "dopa" reaction, by way of abbreviation, and it has been assumed that an enzyme plays an important part in melanogenesis. The alleged characteristic phenomena of enzyme action have in turn been denied because of the significant observation that the dopa reaction and also postmortem pigmentation can be obtained in sections of boiled skin.

Meanwhile, recent studies in biochemistry have directed attention to other types of oxidation-reduction reactions, notably such as involve the sulphur-containing glutathione. The sulphhydryl compounds are

considered typical models for the study of hydrogen transfer from one body to another. Being constituents of the cells, they act as acceptors and donors, thus regulating the cellular metabolism. According to Ropshaw,<sup>2</sup> at the Western Reserve University School of Medicine, Cleveland, there now is support of the view that melanogenesis is an intracellular process and a physiologic function of the pigment cell. It results from the reaction of cystine on protamine and is therefore limited in the skin to the epithelial layer, the only one containing sulphhydryls.

Ropshaw regards melanogenesis as nature's micro-color reaction in which the cysteine-cystine complex acts as an indicator and evidences a phase of nuclear metabolism, viz., the cleavage of protamine and its diffusion into the cytoplasm. Cysteine, he states, is present in the cytoplasm within the more complex body, the tripeptide glutathione, and protamine is present in the nucleoprotein (chromatin). Through cleavage due to cell enzymes these two substances are freed and brought in contact. In vitro a black precipitate is formed when protamine and cystine are brought together in a proper medium. The color reaction just described is reversible, the pigment becoming colorless in time. This may explain the disappearance of melanin or pigment elimination in the form of colorless products. It may be possible to extend the new theory to the phenomena of albinism, postmortem pigmentation, and the effect of light on the skin. For the present, however, there still are sufficient uncertainties in Ropshaw's views on melanogenesis to restrain added speculation.

## Current Comment

### PLACENTAL TRANSMISSION OF VITAMIN A

Discussions of the problems of maternal diet during pregnancy and lactation have as a rule been concerned more with the indirect effects on the fetus and the postpartum food, milk, than with the mother. After all, the maternal organism itself must be depended on in large measure to meet the nutritional problems of the young from the time of conception until weaning. That is why the various physiologic devices incident to the entire period of development in close affiliation with the maternal organism are of such great interest. They involve some surprising peculiarities. For example, is there is no direct connection between the maternal and the fetal circulation, the functions of the placental barrier are significant. Can all essential nutritive components pass through the intervening membranes to support the fetus? There has been considerable debate, for instance, as to whether fats can penetrate the placenta, though Sinclair<sup>1</sup> has recently declared

<sup>4</sup> Barry F S, Shaf-ton A L and Ivy A C. Experimental Edema in Nephrectomized Dogs. Arch. Int. Med. 51: 200 (Feb.) 1933.  
<sup>1</sup> Bloch and Ryhiner. Ztschr. f. exper. Med. 5: 179 1917. Ztschr. f. physiol. Chem. 100: 226 1917.

<sup>2</sup> Ropshaw H J. Melanogenesis with Special Reference to Sulphydryls and Protamines. Am. J. Physiol. 103: 535 (March) 1933.  
<sup>1</sup> Sinclair R G. The Permeability of the Rat's Placenta to Fat. Am. J. Physiol. 103: 73 (Jan.) 1933.

that such a transfer is possible. The new-born infant presents the surprising feature of an unusually liberal store of iron, which tends to avert the danger of anemia provoked by the paucity of this element in milk. Lately, with the growing appreciation of the role of vitamins in nutrition, questions have arisen with regard to the potential supply of these food factors to the young. A recent writer<sup>2</sup> has pointed out that there are two ways in which a young mammal may receive an endowment of vitamin A before it is weaned. The vitamin A may pass through the placental barrier into the fetal circulation during gestation, or it may be ingested by the nursing in the colostrum and the milk. Dann's<sup>2</sup> studies in the Nutritional Laboratory at the University of Cambridge, England, suggest that the amount of vitamin A in the liver at birth is small. Judging by his experience with animals the store in the new-born infant cannot readily be increased by fortifying the maternal diet with rich sources of vitamin A or its precursor carotene. Placental transmission is thus not pronounced. As is well known, however, the milk of the lactating mother can be enriched in vitamin A by a suitable diet. Under such conditions, nurslings can profit greatly by the vitamin that has passed into the milk. There is a practical aspect here. According to Dann the best way of applying vitamin A therapy with the object of giving the child a reserve of vitamin A is to dose it directly. Failing this, the best results may be expected to follow from giving the mother regular fairly high doses of vitamin A during the period of nursing. To give the mother vitamin A during pregnancy will not affect the vitamin store of the child to any noticeable extent.

### CONTRAINDICATED VACCINES

Serologists have long been familiar with the "negative phase" of specific immunity, the precipitous fall in specific antibody titer on the injection of the corresponding vaccine into laboratory animals. This subimmunity is usually transient, being followed in most cases by the establishment of a new and higher level of immunity. The possibility that this negative phase may contraindicate specific vaccine therapy in certain rapidly progressive infectious diseases was suggested about six years ago by Felton and Bailey<sup>1</sup> of Harvard Medical School. The Boston investigators showed that the injection of specific pneumococcus products into laboratory animals causes an immediate and apparently specific lowering of their natural resistance to the pneumococcus sufficient to increase by a hundredfold their susceptibility to simultaneously injected pneumococci. An even more striking negative phase or anti-therapeutic effect is reported by Sia and Zia,<sup>2</sup> of the Peiping Union Medical School. Few if any symptoms were demonstrable by them on the injection of sublethal doses of low-virulent pneumococci into normal rabbits. Similar doses injected into rabbits previ-

ously treated with homologous pneumococcus filtrates, however, led to a rapidly increasing bacteremia, which was usually fatal. In order to simulate this increased fatality in unvaccinated control rabbits, it was necessary to multiply the routine infectious dose from 10,000 to 100,000 times. It is conceivable that these data from the use of relatively large doses in highly susceptible laboratory animals give an exaggerated picture of the clinical dangers. The theoretical possibility of this danger, however, should not be ignored by the proponents of specific vaccine therapy.

## Medical Economics

### PRIVATE GROUP PRACTICE

[This is the third and concluding part of a series of investigations conducted by the Bureau of Medical Economics of the American Medical Association. The first part was published in *THE JOURNAL* May 20 and the second part May 27.]

#### METHODS OF PAYMENT

Does group practice tend toward the establishment of a fixed market price for medical services? Is it a step toward group periodic payments or insurance? There have been frequent affirmative answers to both these questions by those who reason in the field of medicine from industrial analogies.

To secure information on the first point the question was asked: 'Is there a flat or maximum rate for general diagnosis?' It was assumed that if any system of flat rates was in use it would apply to this service. Several who made affirmative replies explained that the flat rate applied only to laboratory tests or to certain limited examinations. Such replies were counted as placing the group in the list of those having a flat rate for diagnosis, which probably makes that number larger than is correct. Of the 239 groups reporting, 15 failed to answer this question. Thirty-six of the 224 groups that answered stated that they had some sort of a flat rate for diagnosis, and 188 had no such rate. That less than 15 per cent of the groups had fixed a flat rate even for an original examination and diagnosis would seem to indicate little tendency to establish standard prices.

It is worthy of notice that a number of groups volunteered information to the effect that they tried to approximate local fee schedules, charged customary rates for the locality and adjusted fees to meet the incomes of the patients.

The same 224 groups replied to the question, "Has the group tried any arrangement for service in return for regular periodic payments?" Only twenty reported any such arrangement. The location of these indicates that the adoption of such plans was due more to local conditions than to any general policy. There were five groups in the state of Washington, four in California, three in Colorado and one each in Alabama, Arkansas, Indiana, Michigan, Oregon, Texas, Utah and Wisconsin.

Comments indicated that some of these arrangements were in the nature of contracts with a single firm to care for its employees and that the service given was confined to industrial accidents and care at the plant. That less than 9 per cent of the groups had ever tried any such plan and that 60 per cent of these were in three states in which this form of practice is highly developed furnish ample proof of a lack of any high correlation between group practice and sickness insurance, and also of the absence of any pronounced trend in that direction among groups.

Some of the following comments from groups not using insurance methods suggest that the attitude of physicians within the groups is much the same as that of those outside.

We are all bitterly and uncompromisingly opposed to any form of group insurance practice that interferes in any way with the individuality of the private physician.

We are entirely opposed to that type of practice.

We believe that this sort of medicine is absolutely detrimental because it gives the recipient a sense of security which he does not have eventually.

<sup>2</sup> Dann, W. J. The Transmission of Vitamin A from Parents to Young in Mammals. *Biochem J.* 20: 1072, 1932.

<sup>1</sup> Felton, L. D. and Bailey, G. H. *J. Infect. Dis.* 38: 131 (Feb.) 1926.

<sup>2</sup> Sia, R. H. P. and Zia, S. H. *Proc. Soc. Exper. Biol. & Med.* 20: 791 (April) 1932.

We have been very active in the campaign to keep that out of this district. If we enter into the practice it will be because local conditions force us in—not because we approve it.

Not by a whole lot That is a breeder of pests

#### LAY EMPLOYEES IN GROUPS

Information as to the number of lay employees was furnished by 230 groups. Owing to a lack of any uniform arrangement between hospitals and groups, when there is any integral connection, the groups which reported control or ownership of a hospital by a group or of a group by a hospital corporation were separated from those operating independently.

Table 8 shows the distribution of the various classes of employees between these two group divisions. No really worthwhile conclusions can be drawn from this table further than

TABLE 8—Distribution of Lay Employees Among Groups

Group Not Owning Hospital	Nurses		Laboratory		Business		Other	
	Number Groups	Number Employed	Number Groups	Number Employed	Number Groups	Number Employed	Number Groups	Number Employed
Employing	113	261	191	226	152	420	89	257
Not employing	47		29		8		71	
Owning Hospital								
Employing	57	320	65	107	60	198	45	363
Not employing	13		15		6		20	

a confirmation of the conclusion already made evident by various other facts—that there is no important feature of group practice which is in any way standardized and that every statement concerning the form or effects of such practice which assumes the existence of any generalization concerning the character of such practice is to be viewed with suspicion.

The possible variations in the relations of hospitals and groups seem to have been almost exhausted. Sometimes the group as a whole and sometimes one or more members own the hospital, or the hospital corporation may own the group and rent it office space. Again, a closed staff forms a group and operates without formal financial relations with the hospital or with almost all varieties of such relations. Several groups reporting no nurses, laboratory workers or business employees in their organization either directly stated, or the answers implied, that they made use of hospital facilities or vice versa. In other cases it is apparent that all the employees, even student nurses, have been included as employees of the group owning or controlling the hospital.

There is the possibility that in so large a sample of group practice as is included in these figures, errors of this kind tend to cancel each other thus to give a validity to the totals which is absent from the details. With this possibility in mind, but with emphasis on the inherent inaccuracy, the totals are offered for whatever value they may have.

The total number of lay employees in the 160 groups not owning or controlling hospitals is 1,314. There are 951 physicians in these groups or an average of 14 lay employees to each physician. In the groups owning or controlling hospitals the corresponding figures are 1,050 lay employees and 428 physicians, with 25 employees per physician. Combining the 2 classes there are 230 groups with 2,364 employees and 1,379 physicians, or an average of 17 employees for each physician. This also gives an average of almost exactly 10 lay employees per group.

#### DENTISTS IN GROUPS

Although it must be admitted that there are few facts that can be definitely presented to justify the conclusion, there would seem to be an increasing tendency to include dentistry as one of the specialties of group practice. Seventy-six groups reported that one or more dentists (a total of ninety-six) are members of groups or more or less closely affiliated. The nature of the connection varies widely. In some cases they are integral members of the group but this statement again has little meaning, owing to the variety of relations existing among those who are included as members.

From various comments and explanations it is clear that many of the dentists have special financial arrangements and

are frequently exempted from any fixed methods of income distribution that may apply to the medical members of the group. Probably because of the more standardized character of dental work and its greater isolation in practice a larger percentage of the dentists than of the physicians in groups have their income more directly dependent on their individual work.

In several instances the dentist was described as "affiliated" with a group, with no further explanation of the character of this relation. In other cases it was explained that the dentist rented office space from the group organization and conducted his own financial relations with his patients.

#### RATIO OF EXPENSES TO PHYSICIAN'S INCOME

One of the questions most frequently raised in regard to group practice is whether pooling of the expense for equipment and operation reduces the percentage of gross income expended for these purposes. It was manifestly impossible to obtain detailed, uniform financial reports from a sufficient number of groups to be representative. Instead two questions were asked: "What percentage of the total income is distributed to physicians?" and "What percentage goes for nurses and lay employees, administration, investment in and maintenance of plant?"

The sum of these two figures was 100 per cent except in a very few cases, which were excluded from the study. Manifestly, if it is desired to know the division of the total gross and net income of all the groups reporting, these separate percentages will give no information. Averaging, or combining in any other way, percentages calculated on differing bases does not show anything concerning the bases from which the original percentage was derived.

But if one considers these percentages as representative of individual groups, then medians and averages show the prevailing condition and give a fairly accurate picture of the general situation as to the ratio of expenses to gross income in group practice. Information was furnished on this point by 142 groups. This is the smallest number of replies received to any inquiry on the questionnaire, but is several times the number of groups used as a basis for any previous calculation on this point. Moreover, the replies are sufficiently well distributed geographically and as to size of groups to be fully representative.

It is a generally accepted rule in the interpretation of questionnaires that replies giving estimates are apt to be over-optimistic and to some extent reflect hopes and wishes. It should also be noted that a number of those who did not reply

TABLE 9—Net Income Distributed to Physicians

Size of Group	Number Groups	Average per Cent	Median per Cent
3	34	60	65
4	23	58	55
5	22	59	60
6	7	51	50
7	14	57	55
8	11	53	60
9	7	55	65
10	7	62	53
Over 10	17	53	60
Total	142	58	60

to these questions with any definite estimates volunteered comments to the effect that all income was going into expense or that the group was operating at a loss.

With these explanations table 9 is offered to show the average and median percentages of gross income distributed to physicians in these groups, according to the size of the groups.

The average for the 142 groups is 58 per cent, and the median, computed from an equal number of groups with a higher and lower percentage, is 60 per cent. The question of whether increasing the size of the groups reduces the overhead relative to income is clearly answered in the negative. There is no trend visible in relation to size in either averages or medians.

The other question, already asked, as to whether pooling expenses in a group reduces the percentage of gross income which must be expended to conduct a practice may be answered by comparing these figures with those obtained from a study of gross and net incomes in individual practice.<sup>6</sup> In this study it was determined that the net income of individual practitioners varied according to the size of the city, from 66 to 73 per cent of the gross and that "there is a tendency for the net income of general practitioners to be about 67 per cent of gross income."

From this comparison it would seem to be fair to draw the conclusion that from 7 to 9 per cent less of the money paid by the patient goes to the physician in group than in private practice. This confirms the previously quoted opinion of a majority of secretaries of county medical societies that group practice does not afford a method of reducing the cost of medical care.

This conclusion was arrived at by E P Sloane in 1929, who said<sup>8</sup>

There is no economic side to ethically conducted group clinics from the standpoint of increased revenue. The doctors who organize a group with the expectation of thereby producing either through increased number of patients or larger fees a larger joint income than the combined income of the different members would be if practicing individually are doomed to disappointment. From the standpoint however of economy in providing facilities for thorough and complete examinations and competent service diverse and varied as diagnosis medical treatment, eye nose and throat surgery bacteriology X-ray pathology pediatrics obstetrics neurology etc. there may be distinct economic advantage in co-operation in a group clinic to both its members and to the patient.

The secretary of the Wisconsin Medical Society expresses the same opinion.

Wisconsin has as many clinic groups or medical service centers as any other state of like medical facilities. It is my judgment that practice in many of these groups is not clinic practice as that term is generally understood by the medical profession but that they are in fact associations of physicians representing various interests in medicine who have grouped themselves about a single unit for convenience presumed economy and prestige. Where such medical centers were erected prior to 1929 the majority now find themselves with a heavy overhead that cannot be contracted to meet changed economic conditions. In general it is my judgment that physician members of most clinics have been hit harder by the economic stringency than any others except specialists who received high incomes.

It would appear therefore that these facts justify the conclusions of Samuel C Harvey<sup>8</sup> of the Yale University School of Medicine, who said

It is stated that services of the family physician can be improved by coordinating him in a group together with the specialist in association with and under the control of a non profit making corporation such as a hospital. The assumption is that the consumer requires in a majority of instances the services of various specialists and of an expensive plant, this making it more economical to bring at once the family physician and his clients to a central point where these are available. Moreover it is also assumed that by such organization the requisite service could be provided far more economically than is done now.

The majority of family physicians at the present time practice from their homes where the overhead for office rent, transportation and incidental expenses is to a considerable extent included in the necessary charges for shelter transportation and other needs of himself and family. Moreover the expense of setting up the necessary office equipment and apparatus for the care of illness with which he deals is minimal. In other words the charges of a plant are a very small fraction of the cost of his service. To bring him into a group renders these fixed charges a major fraction of the cost of his services and the net result must be either increased charge for service or less net return to the physician.

From the standpoint of the consumer it means that in 80 per cent of his contacts with the family physician the distance traversed to obtain his care is greater in order that in the remaining 20 per cent in which he needs the services of the specialist the distance may be shorter. Only by the greater use of the specialist for matters properly belonging to the family physician can such grouping be justified but the proposition that presumes to provide more expensive service while at the same time lowering the cost is within itself incompatible except by involving the mystic word organization.

This question of economy of operation has been stressed because an assumed superiority of group practice in this respect has been the basis of arguments, resting on commercial analogies that this greater economy and resulting superior competing power would cause groups gradually to supplant

individual practice. If, as now appears to be probable, group practice lacks this superiority, the question of its growth relative to other forms of practice must depend for its answer on the effect of other features.

These facts also seem to indicate that group practice does not reduce the cost of medical care to the patient.

#### DISTRIBUTION OF INCOME AMONG GROUP MEMBERS

So great is the diversity of plans for the distribution of net income among the members of the groups that any attempt to classify these plans into clearly distinguished types is impossible. There were 200 groups that described the methods used in the distribution of income among the members. An attempt is made to group these as accurately as possible in somewhat broad and indefinite classifications in table 10. These classifications are those made in the replies from the group, even though comments and explanations sometimes suggested another classification. It is of course, clear that the first three classes are all of the same type, and comprise fifty-five groups in which the net income is determined by some plan fixed in advance. Yet there are considerable individual variations

TABLE 10—Distribution of Income Among Members

	Number Groups
Fixed percentage	44
Equal division	39
According to shares owned	2
All salaries	29
Salaries except to owners	29
Percentage to partners other salaries	10
Salaries and surplus	4
Salaries with surplus to shareholders	1
Individual	24
Percentage based on incomes	15
Special	3
	200

Several reports added that one or more physicians, sometimes described as on trial for admission to full group membership, are on salary or have special arrangements.

One group in this class reported

At the formation of the group a set figure for each man was agreed upon. In case the income is below the estimate each man receives his pro rata share. In case there is more income than the estimate it is divided equally among the seven members.

Others said

Divided on a pro rata basis according to what the group feels each individual is worth in terms of ability and years of experience.

Partially on a percentage and other personal

"The net profits are distributed as a salary distribution on a fixed percentage basis. The basis for members of the corporation is changed from time to time as circumstances require. A small number of assistants and fellows are on a definite salary for a maximum period of three years.

The next five classifications comprise those groups in which the distribution is primarily on a salary basis. There are seventy-three of these, and it is certain that in most instances there is some sort of secondary distribution of any sums in excess of salaries, at least in prosperous times. Even in the twenty-nine cases in which it was reported that all members were paid by salaries there were many comments which showed that these salaries were supplemented by other considerations. Sample explanations follow.

Each physician is paid salary amount based on amount of each physician's income.

Salary allowance to each member of the group and after that the money is divided as profits.

Percentage and salary.

Surplus over salaries and reserve funds insurance etc. divided equally among senior members.

Each member makes his own charges through hospital office. He is paid a monthly salary and at the end of each year is paid an additional sum to make his income 50 per cent of his total charges. This is paid provided the income to the hospital from his work equals not less than 75 per cent of his total charges. Should there be any profit after this it is either carried as a surplus or distributed as dividends. Should there be a deficit it is overcome by an assessment of each member of the group.

All physicians on salaries. Balance of income after expenses are paid is divided according to ownership in building and equipment.

6 Leland R G. Income from Medical Practice. J A M A 96:1683 (May 16) 1931.

7 Report to Council Wisconsin State Medical Society Jan. 7 1933 pp. 23.

8 Harvey S C. Oikonomia Medika Yale J Biol & Med 5:333-334 (March) 1933.

There is practically no real difference between those reporting all salaries and "salaries except to owners." As the quoted explanations show, some might, with almost equal accuracy, have been placed in the class in which incomes are determined by a fixed percentage.

Two co partners equally—all others on salary

Institution owned by \_\_\_\_\_ and \_\_\_\_\_ All others on salary with bonus Salaries range from \$300 to \$500 per month. Bonus determined from private practice collections

Three senior staff men share equally in net profits if any Three junior staff men on salary basis with bonus

I am the sole owner of the building and also all the equipment. The dentist pays me rent and collects his own accounts. With E E N T man after the rent and overhead expenses have been deducted the net income is turned over to him. The pediatrician is doing my laboratory work in payment for rent and a share of the expenses of the office. The internist is paid for each consultation separately by the patient. My assistant is on a salary.

Percentage to two members. Salary and commission to two members'

The net is divided after general expenses are paid. The new associate is put on a salary of \$300 to \$400 per month for probation period of two or three years. If satisfactory he is permitted to join the organization on the basis of an increasing percentage each year until the full percentage equal to the highest is reached at the end of twelve or fifteen years.

New member goes on a salary for about one year if then mutually satisfactory he is placed on a percentage basis planned to represent his work value and usefulness. This percentage increases at intervals it is planned to bring all men to an equality eventually.

There were thirty-nine groups that reported that incomes were determined by the individual earnings of the physicians. It may be noticed that this is eight less than the number that reported that financial relations with patients were with individual physicians. The explanation is that five of the 47 so reporting did not confirm this relation by replying to the question as to distribution of income, and three are included under "special." As far as can be determined from the accompanying explanation, there would seem to be little significance in the division between "individual" and "percentage based on incomes." It is probable that in most cases the distinction consists in a common collection system in the latter classification, and a deduction of common expenses before the amount collected is returned to the individual physician. However, there is not sufficient information to assure any such conclusion.

In the three "special" cases an endowment supports all or a large part, of the required equipment and general expenses, and the physicians receive their individual earnings. There are therefore forty-two groups in which the division of income is on the basis of individual earnings.

All efforts to find any correlation between the method of distribution of income and the size of the group or other characteristics failed. All methods seemed to be present in each size and form of organization.

One conclusion which may safely be drawn from this great diversity in the methods of distributing income is that the personal relations, preferences, prestige and other individual characteristics of the members of the groups and their relative bargaining and earning power and organizing ability are the dominant forces in determining the form of organization of each group, and that there is no apparent sign of any tendency to approach a definite type or fixed model.

#### REASONS FOR FAILURE OF GROUPS

Addresses were furnished for a number of groups, which, when investigated, were found to be no longer in existence. Many of the secretaries of county medical societies also reported that groups formerly operating in their locality, had been discontinued. In all these cases a letter was sent either to the secretary or to a former member of the group, asking the reasons for the discontinuance of group practice. The percentage of replies was naturally much smaller than to any of the other inquiries sent out, but those received throw considerable light on certain phases of group practice.

The replies which simply checked questions as to possible causes gave the following reasons for failure: "insufficient patronage," two groups, "failure of one member to do his share of work," one, "personal differences among clinic members," three, "attitude of outside physicians," two. Comments on the last cause mentioned were: "Not jealousies but desire for the best." "Outside physicians had nothing to do with them, as clinic used the group to promote business and attract it to themselves."

A number of replies gave further details concerning individual groups, which give so clear a picture of some of the forces that have caused the dissolution of groups as to deserve quotation.

The secretary of a county medical society said:

There were two organizations for group practice in this city. Both have been discontinued for about the same reasons. Each clinic was owned and operated by the doctors who composed it. The income being divided on a percentage basis according to what each member produced the year before the organization was formed.

One man had to draw out of each group on account of failure of health and neither group could ever agree on their work afterward. However dissatisfaction was arising beforehand because some thought others were not doing enough work to earn their part of the collections.

It is my opinion that a group can be run satisfactorily only by one or not more than two at most owning and controlling the institution the other members of the group being on a salary and possibly commission combined.

Another secretary explained the features that led to the failure of a group in his city as follows:

About eighteen years ago a group was formed here. This group was made up of a surgeon, an eye, ear and nose specialist, an x-ray man, an internal medicine man and a dentist. This group continued as first organized and then began falling apart. There are no groups here now or in nearby towns.

The reason for falling to pieces of this group were many. In fact there was no good reason for such a group ever being organized, and every reason why it would die a natural death.

1. These men were not real specialists. They assumed that by dividing up the work they might prosper and draw the public patronage. In this territory we have the real thing in the way of specialists: men of outstanding worth. The people here know this fact and of course could not be drawn into such a clinic as these men here organized.

2. The layman could easily see that if he consulted one member of this group he would probably be sent to most of the other members for their opinion thus adding unnecessarily to the expense. There are too many men like myself in general practice who would not wish to refer patients to a local group but wish to take or send them to real specialists in the larger city where they can have the best of service. With graveled roads, ambulances, etc., patients and general practitioners alike naturally seek the best service.

Whatever the reasons for the groups falling to pieces in this territory (there were two clinics in this part of \_\_\_\_\_) they have long since gone out of existence and I would say that this is the best for the profession and the best for the laity. I believe that group practice has done more to bring the honorable members of the medical profession into disrepute than all other things. The layman would naturally come to distrust us all when some of us are banded together in a group. This group practice has done much to help the chiropractors by driving the laity over to them where the very thing I am speaking of is pointed out to the patients by these irregular practitioners.

The head of a group which has recently dissolved gave a vivid picture of the elements that led to dissolution:

The \_\_\_\_\_ Clinic was formed by the writer for the purpose of getting a group of qualified medical men who would assist me in carrying on a practice which had been built up to a point that I was unable to take care of it satisfactorily. There were too many problems for one small brain to solve.

My idea was that a group of men trained in different specialties would be beneficial to the individual patient and to the community and would make it possible for me to carry on a more satisfactory practice of medicine. The idea did not work out as I had anticipated. First the patients did not take to it kindly. They preferred to have the medical man of their own choice not one selected because of his qualifications to take care of them. Second when the men first came into the group they were willing to cooperate and worked satisfactorily but soon their egotism and selfishness got the best of them and they would no longer cooperate. Third each member of the group accepted their agreement of salaries and dividends with enthusiasm but after working a few years each one felt that they were not getting satisfactory compensation for the work that they were doing.

It was therefore impossible to satisfy the individual patient and the individual medical man. There was always dissension.

After twelve years of effort to carry on group practice I decided to break up the organization and did so on March 31, 1932. All the men who were in the group at the time the organization was discontinued continue to occupy offices together and are now working together harmoniously all carrying on their individual practice satisfactorily.

After twelve years of experience with group practice it is my opinion that from the standpoint of the patient and the medical man connected with group practice it is unsatisfactory. I do not believe that our organization has proved an exception. I have talked to medical men connected with groups and find that the same condition exists with the other groups that I have contacted.

I would like to voice my opinion at this time, on the Majority Report of the Committee on the Cost of Medical Care. After twelve years of experience in a carefully organized and properly conducted group practice from both the business and ethical standpoint I believe that their plan is not workable from the standpoint of the individual patient or the physician. They will encounter the same difficulties that I have encountered in my group. The average American patient demands the privilege of selecting his own physician and the average American physician demands independence in conducting his medical practice. Neither the patient nor the physician will stand for dictation.

A secretary of a county medical society, after filling out the questionnaire for a defunct society, commented as follows:

The head of the clinic guaranteed each physician associated with the organization a certain amount annually understood to be about \$5 000 in some cases and less in others. After his own interest had been subtracted and the overhead charged off if any amount remained it was divided on a percentage basis. After three years of this arrangement the members of the clinic complained that the head was deriving more from the organizational activity than should be his and a reorganization was effected whereby the head of the clinic became an employee of the clinic as a whole. This did not last long. The younger members of the clinic soon found that they could not pay the amount guaranteed the head surgeon and founder of the organization. Another reorganization took effect. The founder of the clinic who had been well established in the community for years prior to his establishment of the clinic organization then left the organization and resumed a private practice. The younger members tried to carry on but after two or three years decided to dissolve the organization. All of them are now engaged in private practice in the community and the founder is dead.

The experience of another physician illustrates some additional points:

Some years ago I had in business with me three other men but I have discontinued the arrangement and at this time have only an anesthetist an associate who acts as my assistant, and a bookkeeper and I have confined my practice to surgery.

There are many reasons why group practice is desirable under certain circumstances but there are also a considerable number of disadvantages coincident with it. Each man in the group naturally inherits all the enemies as well as the friends of his associates. However the worst feature of group practice is the almost unavoidable tendency toward sending the patient the rounds of the different doctors so that he emerges with a rather elaborate examination and a fee commensurate with the time spent on him when he really intended to consult one man about a somewhat simple trouble.

These comments so thoroughly cover most of the weaknesses in group practice as to need little comment beyond calling attention to the manner in which they confirm a number of conclusions already indicated in reports of the operation of existing groups.

#### SUMMARY AND CONCLUSIONS

The outstanding conclusion from a summary of the analyses made of the various features is that there is no clearly defined or standardized type of group practice. Physicians are forming groups as they have always done, according to their personal friendships, financial advantages, scientific and professional ambitions and all the other motives that led Aristotle to call man a social animal. In a minority of instances it has been possible to assemble such a body of selected specialists and adequate scientific equipment as to constitute a fairly comprehensive medical unit, capable of offering a "complete medical service." That the great majority of groups do not have any such adequate representation of specialists is no reflection on the character of the work done or on the individuals composing the groups, but only on the exaggerated claims that have been made for group practice—claims that are largely based on the presumption that such comprehensive groups are typical.

There was a period of rapid formation of groups immediately following the war. Two reasons may account for this. A large number of physicians had served in the medical corps and been impressed with the value of organization. In the second place, the fame of the Mayo Clinic led to a belief that its success could be duplicated by a multitude of other groups. In reality, instead of this group forming a type to which all others approximated it has remained so unique as to be impossible of inclusion in any generalities regarding group practice. It would seem that the existence of the Mayo Clinic was also largely responsible for setting up a model which should have the comprehensive, all-sufficient character already considered.

Another possible contributing factor to accelerated growth in this period in cities of from 10,000 to 75,000 population may have been a lag between available laboratory and hospital facilities on the one hand and the recognition of the necessity of such facilities on the other. Pooling of medical resources undoubtedly did much to supply needed medical equipment and to improve local medical service.

It would appear that about 1920 a variety of limitations on further rapid expansion began to have an effect. It is true there was another peak of growth in the 'prosperity' years of

1928 and 1929. But although the industrial rise was higher, and both population and the number of physicians were greater, the number of groups organized during the three peak years was only a few more in the later period and, what is possibly more significant, the number of physicians entering these groups was 15 per cent less. This seems to indicate a return to earlier simpler and smaller forms of association and a tendency to abandon the attempt to build up the larger comprehensive type formerly envisioned as typical.

Thus slowing up in the rate of growth and the change in character may be due in part to changes in the environment and in part to some possibly unexpected developments within groups. There has been an extremely rapid growth in hospital and laboratory facilities during the last decade. A much larger percentage of individual physicians can now obtain access to these without the necessity of forming a group. A perhaps excessive development of specialization has also made available a wide choice of specialists for consultation in most cities. These developments reduce the incentive to form groups in order to obtain access to equipment and consultants.

Other developments that have appeared within the groups themselves have a tendency to limit the rapid extension of this form of practice. Given ample financial resources it is no difficult to assemble the physical equipment of an ideal group. But the figures showing the financial results of group practice do not seem to justify the conclusion that there is any such inherent economic advantage in such practice as to make the accumulation of the necessary funds for the purchase of extensive equipment inevitable. In fact there is considerable evidence to indicate that the existing equipment of many groups was purchased from previous individual earnings of those who formed them.

The analysis of the composition of group personnel suggests other difficulties in the formation of comprehensive groups. There is no such compelling economic force to produce the sort of organized specialization in medicine as is found in industry. Physicians are not only traditionally individualistic, but all professions have established a pattern of economic relations based on individual responsibility and personal management of economic dealings with patrons. There is a powerful resistance to any attempt to change that pattern into the one developed in industry, where the individual can toil at his occupation only by first finding a job and must then seek advancement through promotion within an established or organized hierarchy. The physician unlike the industrial worker, always has the alternative of individual practice and he prefers it to any form of association in his work. All specialization is highly developed there is no such grades of subordination such as exist in industrial organizations and are basic in most forms of organization. There is no "reserve army" of unemployed medical specialists that can be drawn on to fill the gaps in a group organization.

All relations between physicians, like those between physicians and patients, are intensely personal. Prestige and prestige are not the only, and probably not the chief, qualities required to insure harmonious relations with colleagues and a lack of such harmony is destructive to service. Whether these reasons offer the best explanation for the failure of far more than a major portion of groups to assemble an adequate and symmetrical body of specialists is a question that is impossible to answer.

Such other features as "physical equipment," "relations with patients," "methods of payment," "distribution of income among physicians," "variations and such slight, if any, correlation of these features as to indicate that their differences are determined largely by individual preference." All these features are auxiliaries to the main feature of group medical care and seldom are of any importance in determining these methods or even of affecting the cost of such care, unless they form a basis of lay domination of the medical practice. The tendency of lay writers to exaggerate these features seems to be a result of an attempt to show an analogy with industrial organization and development.

These features become of importance only when they tend to dominate the personal features. Even the latter are of importance only when they tend to dominate the personal features.

may so dominate in some instances is suggested by the comments of the secretaries of county societies on the tendency of some groups to give an excessive number of laboratory tests. The comment of the Commission on Medical Education is also significant.<sup>10</sup>

Another tendency in medical practice is the emphasis placed upon mechanical devices. Great virtue is ascribed to laboratory and mechanical examinations of all kinds. These examinations are necessary in many instances as supplementary tools in determining diagnosis and in providing information not otherwise procurable. But the laboratory findings are valuable only in so far as they are correlated with the medical problem of a given patient. There has been a feeling that the development of laboratory methods tends to simplify diagnosis. The more scientific laboratory determinations become and the wider the field of their application the more thoroughly trained must the physician be to interpret correlate and utilize the findings of the laboratory in relation to the problem of the individual patient.

That financial relations with patients, when these involve insurance schemes or other forms of contract practice, may affect the character of medical service and the position of physicians is also quite evident.<sup>11</sup> There is some evidence that the existence of a heavy overhead may, in some instances, lead a group to adopt forms of contract practice which would otherwise be disapproved of by the majority of the members of the group.

The dominance of lay employees and especially of lay business managers, is apt to increase this tendency, which is also mentioned by some secretaries of county societies. So evident is this tendency that a committee of the Wisconsin Medical Society recently made the following recommendation.<sup>12</sup>

In such organizations as may employ a fiscal agent for the purposes of assessment and collection of fees our attention is called to the fact that such individuals frequently are the products of commercial schools and sometimes are financially interested in a showing of income over expenditures. Such a system lacking the immediate and personal supervision of a physician tends to result in fees exorbitant to particular individuals reflecting to the discredit not only of the group but of the entire profession. We earnestly recommend that this Society voice the principle that under the conditions cited some physician of the group be selected as the immediate adviser of the fiscal agent and be consulted in the matter of assessment and collection of all fees.

In the course of this study individual examples have been found in which it is claimed that advertising, offensive to the profession, instances of exorbitant and ill-balanced fees for certain services and special efforts to push such services as seemed most profitable, with little regard to their actual medical value, have resulted from lay financial management of groups. Of course, such abuses can be found in individual practice, but the fact that group organization under a lay business manager permits such practices to be initiated and conducted by a person not directly subject to professional discipline and not imbued with professional ideals suggests that the danger of such abuses is increased under such conditions.

Aside from the effects of these features, which are peculiar to group practice, there are far fewer fundamental differences between group and individual practice than most of the discussions of the two types seem to assume. There can be no different standards of judgment as to ethical or medical questions. The important differences among the groups are the same as those existing among individual practitioners, with possible reservations as to the tendency, already mentioned, of the group to accentuate the characteristics of its members.

Groups formed of congenial, able, conscientious members will increase all these qualities by association, and the opposite qualities will be equally aggravated when combined in a group. Individual physicians who have access to, and make all necessary use of available laboratory facilities and opportunities for consultation in cases in which there is a real need for these aids can give service in no important way differing from that given by even the well organized and equipped groups.

<sup>10</sup> Report of Commission on Medical Education\* 1932 pp 23 32 33 and 51 52. For further discussion of laboratory problems see Kilduffe, R. A. Practical Phases in Utilization of the Clinical Laboratory. J. M. Soc. New Jersey 29: 491-497 (June) 1932. Miller S. R. Contemporary Fads and Fallacies Therapeutic and Diagnostic Which Reflect Dangerous Professional Credulity. Pennsylvania M. J. 35: 348-350 (March) 1932. Kellert Ellis. How the Modern Laboratory Aids Medical Service. Mod. Hosp. 36: 61-66 (Jan) 1931.

<sup>11</sup> Leland R. G. Contract Practice. J. A. M. A. 98: 808-815 (March 5) 1932.

<sup>12</sup> Progress Report of the Special Committee on the Distribution of Medical Costs in Wisconsin of the Wisconsin Medical Society. Wisconsin M. J. December 1932. Supp. p. 964.

## Association News

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9 15 to 9 20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

June 6 The Ideal Food Label

June 8 We're All Much Alike.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

June 10 Allergy in Childhood II

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARIZONA

**Society News**—Dr. Eugene R. Lewis, Los Angeles, addressed the Cochise County Medical Society in Douglas, May 4, on otolaryngology.—Dr. Norman Kilbourne, Los Angeles, addressed the Pima County Medical Society, May 9, in Tucson, on internal hemorrhoids.

**Health Program Planned**—A complete revision of the regulations of the Arizona State Board of Health will be undertaken in the immediate future. Although curtailment of appropriations will prevent complete expansion, it is planned to carry on a statewide educational campaign to teach the causes, care and avoidance of common diseases. In addition a system of weekly reports from practicing physicians will be inaugurated as a check-up on daily reports of contagious diseases made by them to the local health officer and efforts will be made to improve the reporting of venereal diseases in Arizona. A new death certificate will be issued, on which the length of residence in the state before death will be required. This insertion, with a report on the duration of the disease, will furnish statistics on the incidence of the disease arising in the state.

### CALIFORNIA

**New Laboratory Policy**—At a meeting, April 22, the state board of health adopted the following general policies relating to service provided by the state bacteriologic laboratory:

1. No specimens will be received from cities or counties having an approved public health laboratory.

2. Blood specimens to be examined as a check on treatment will not be received except for indigent patients and from communities not excluded by the first ruling.

3. Blood specimens will be received for purposes of diagnosis only from communities not excluded by the first paragraph.

4. Name and postoffice address of every Wassermann patient must accompany the sample and the question as to indigency must be answered.

5. The chief of the laboratory is authorized to mail a notification to each patient advising him that no charge is made by the state for the examination.

6. Blood specimens will be accepted from all state institutions and county hospitals without reservation other than that county hospitals receiving pay patients may send specimens only from patients who do not pay so certifying on the form accompanying the specimens.

7. The chief of the bureau of laboratories is authorized to refuse service to physicians who do not comply with these requirements.

### CONNECTICUT

**Anniversary of Mental Hygiene Movement**—The twenty-fifth anniversary of the establishment of the mental hygiene movement in the United States was observed in Sprague Hall, New Haven, May 6, by the Connecticut Society for Mental Hygiene, the National Committee for Mental Hygiene and Yale University. The mental hygiene movement, now nationally organized, began with the founding of the Connecticut society by Mr. Clifford W. Beers, May 6, 1908. Among the early sponsors of the movement were Dr. William H. Welch, James Rowland Angell, LL.D., Russell H. Chittenden,

Henry van Dyke, Anson Phelps Stokes, Jane Addams, Julia Lathrop, Major Henry L. Hugginson, George Wharton Pepper, Jacob Gould Schurman, William H. P. Faunce, Melville E. Stone, Dr. Charles Macfie Campbell, Dr. Adolf Meyer, and Wilbur L. Cross, now governor of Connecticut. The first international congress on mental hygiene was held in Washington, D. C., in 1930, attended by delegates from more than fifty countries. The second will take place in Paris in 1935. The American Foundation for Mental Hygiene was created in 1928 to serve as custodian and administrator of gifts and bequests for agencies or work in any part of the field. The program celebrating the event in New Haven included the following:

Governor Cross, The Place in Literature of 'A Mind That Found Itself'—The Book That Started a Movement.

James R. Angell, president Yale University Mental Hygiene in Colleges and Universities.

Charles Edward A. Winslow DPH, professor of public health Yale University School of Medicine, Growth of the Mental Hygiene Movement During the Past Twenty Five Years and the Unique Work of Its Founder.

Mr. Beers, Glimpses of the Development of the Movement.

At the morning session, "Mental Hygiene in Education" was discussed by the following: Mark A. May, Ph.D., professor of educational psychology, Yale University; William J. Cooper, commissioner of education, Washington, D. C.; Vivian T. Thayer, Ph.D., educational director, ethical culture schools, New York; and Dr. Marion E. Kenworthy, director department of mental hygiene, New York School of Social Work, New York. Mr. Beers is the founder and secretary of the national committee, organized in 1909, the American Foundation, and of the International Foundation for Mental Hygiene, established in 1931. He is general secretary of the International Committee for Mental Hygiene, which he founded in 1930. At the recent observance, a volume of tributes, collected by Dr. Welch, was presented to him.

### DISTRICT OF COLUMBIA

**Personal**—The appointment of Major James Stevens Simmons as a member of the National Board of Medical Examiners has been approved. Dr. Simmons is director of laboratories and of the department of preventive medicine in the Army Medical School. He succeeds Major Paul E. McNabb, who has been assigned to duty in the Philippines.

**Graduate Clinics**—The first graduate clinics of the George Washington University School of Medicine will be conducted in Washington, June 5-7. All the first day will be devoted to surgical and medical subjects at the Gallinger Municipal Hospital. The second day ward rounds and laboratory demonstrations will be given at the medical school while the third will be devoted to special clinics at various hospitals. Demonstrations and clinical material in psychiatry, designed particularly for the general practitioner, will also be presented on the last day. No fees will be charged. It is hoped to make these clinics an annual event.

**University News**—Dr. William H. Howell, Baltimore, addressed the Smith-Reed-Russell Society of George Washington University School of Medicine, April 6, on "Recollections of a Physiologist During the Past Half Century."—Owen Stanley Gibbs, M.B., professor of physiology and pharmacology, University of Georgia School of Medicine, has been appointed professor of physiology at Georgetown University School of Medicine.—Dr. Eliot R. Clark, Philadelphia, addressed the faculty and students of the George Washington University School of Medicine, April 29, on "Spontaneous Activity of Capillaries."

### FLORIDA

**Bills Introduced**—H. 1161, to amend the pharmacy practice act, proposes that persons other than licensed pharmacists may operate and conduct pharmacies but that no one other than a licensed pharmacist can sell, compound or dispense drugs or medicines, except proprietary and patent medicines in the original packages. The bill proposes, too, that every prescription compounded and dispensed shall bear a label on the bottle or other container, stating the license number of the registered pharmacist who compounded it. H. 1197 and S. 657 propose to establish throughout the state a system of dispensaries for dispensing and distributing for medical purposes narcotic drugs and all potable solutions containing ethyl alcohol except vinous and malt solutions containing not in excess of 3.2 per cent. Narcotics are to be dispensed only on the written prescription of a physician, dentist or veterinarian.

**State Medical Meeting and Election**—Dr. William M. Rowlett, Tampa, was installed as president of the Florida Medical Association at its sixtieth annual meeting, in Hollywood May 2-4, succeeding Dr. Gerry R. Holden, Jacksonville. Dr. Homer L. Pearson, Jr., Miami, was named president-elect.

Vice presidents are Drs. James Ralston Wells, Daytona Beach, George C. Tillman, Gainesville, and Henry J. Peavey, Jr., Fort Lauderdale, and Dr. Shaler Richardson, Jacksonville, is the secretary. Jacksonville was selected as the place for the annual meeting in 1934. The scientific program included the following physicians as speakers:

Walter E. Dandy, Baltimore, Brain Tumors, Their Diagnosis and Treatment.

Henry E. Palmer, Tallahassee, Poisonous Effect of the Nuts of the Tung Oil Tree If Eaten by Man.

Joseph S. Spoto, Tampa, Treatment of Hemophilia with Ovarian Extract.

Alan Brown, Jacksonville, Lymphopathia Venerea.

Herbert E. White, St. Augustine, Appendicitis with Its Increasing Mortality.

Roy J. Holmes and Milton M. Coplan, Miami, Review of Some Urinary Anomalies and Pathologic Conditions Producing Symptoms of Especial Interest to the General Practitioner.

George M. Dawson, West Palm Beach, Carcinoma of the Colon.

James H. Fellows, Pensacola, Cerebral Injuries of the Newly Born.

Homer L. Pearson, Jr., Miami, Placenta Praevia.

Robert B. Harkness, Lake City, Granuloma Inguinale.

Joseph Halton, Sarasota, Observation of Five Hundred Fractures.

Wilfred M. Shaw, Jacksonville, Fractures at the Ankle and Wrist Joints.

George E. W. Hardy, Jr., Tampa, Fractures of the Cervical Spine.

Below the Atlas and Axis with Report of Two Cases.

Warren W. Quillian, Coral Gables, Use of Unsweetened Evaporated Milk in Infant Feeding.

Joseph W. Taylor, Tampa, Unilateral Exophthalmos.

Charles F. Roche, Miami Beach, and Thomas Duckett Jones, Boston.

Heart Disease of the Rheumatic Type.

Turner Z. Cason, Jacksonville, Hypothyroidism in Adolescent Girls.

With Particular Reference to Social Delinquency.

Henry C. Dozier, Ocala, Problems of Medicine.

Henry Hanson, Jacksonville, A State Health Department's Service to the Medical Profession.

### ILLINOIS

**Bill Introduced**—S. 642, to amend the occupational disease act, proposes to require employers, using any process of manufacture or labor in which silicon dioxide is employed, to remove the dust created in such process by either ventilating or exhaust devices.

**Lectures in Pediatrics**—During the summer and fall a one day lecture course in pediatrics will be conducted in eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the educational committee of the Illinois State Medical Society. The following cities have been tentatively selected as the centers: Chicago, Rockford, Rock Island, La Salle, Peoria, Springfield, Quincy, Champaign, East St. Louis, Effingham and Benton. Subjects to be covered by the course include care of the new born, care and feeding of infants, preventive pediatrics, behavior problems and discipline in children, and general treatment of the sick child. The five pediatricians who have been selected to organize groups of teachers are Drs. Isaac A. Abt, Julius H. Hess, Joseph Brenne-mann, Clifford G. Grulee and Robert A. Black, all of Chicago.

**Society News**—The St. Clair County Medical Society was addressed in East St. Louis, May 4, by Dr. William F. Hardy, St. Louis, on ophthalmologic problems from the point of view of general practice and in Mascoutah, May 3 by Dr. Grandison D. Royston, St. Louis, on high points in obstetric care.—Dr. Harvey J. Howard, St. Louis, discussed "Aviation Medicine and Its Contribution to General and Special Medicine" before the Sangamon County Medical Society, Springfield, April 6.—Dr. Richard S. Weiss, St. Louis, addressed the Madison County Medical Society, April 7, at Collinsville, on "The Precancerous Dermatoses."—The Lake County Medical Society was addressed, May 9, by Dr. Robert H. Herbst, Chicago, whose subject was "Transurethral Electro-resection of the Prostate Gland."

### Chicago

**Search for Precocious Students**—Northwestern University's attempt to meet the needs of precocious students between the ages of 13 and 15 will be extended next year, it was announced recently. The scholarship of the four boys and two girls admitted in September, 1932, is considerably above that of the freshman average. The students are under the supervision of a faculty committee specially interested in the training of precocious students. High school principals are now being asked to send to the university names of likely candidates for a second group of precocious students. The university will select those who manifest unusual potentialities for distinguished services in one of the arts, sciences or professions. By precocious, it was pointed out, is implied an intelligence quotient of more than 130 or unusually early mental development (THE JOURNAL, Feb. 27, 1932, p. 742).

**Dr. Jordan to Retire as Chairman**—William H. Taliaferro, Ph.D., associate dean of the Division of the Biological Sciences, University of Chicago, has been appointed chairman of the department of hygiene and bacteriology to succeed Edwin

O Jordan Ph D, who retires October 1, after forty-one years association with the university. Dr Talaferro came to the University of Chicago in 1924 from Johns Hopkins, where he had been a member of the teaching staff since 1918. He has been professor of parasitology since 1927 and associate dean since 1931. He is president of the American Society of Parasitologists. Dr Jordan a native of Maine and a graduate of Massachusetts Institute of Technology, came to the University of Chicago as associate in anatomy in 1892. He was appointed assistant professor of bacteriology in 1895, associate professor in 1900, and professor in 1907. When the department of hygiene and bacteriology was set up in 1914, Dr Jordan was appointed chairman. He is editor of the *Journal of Preventive Medicine* and joint editor of the *Journal of Infectious Diseases*. The Andrew McLeish Distinguished Professorship was awarded to Dr Jordan in 1932. He is a former president of the Society of American Bacteriologists and the American Epidemiological Society. As professor emeritus he will offer some graduate courses and will continue his research in the department.

### LOUISIANA

**New Cancer Clinic**—A modern clinic for the treatment and prevention of cancer will be established at Charity Hospital New Orleans, it was recently announced. Adequate facilities for the study of the nature, cause and cure of the disease will be provided. According to the report, this clinic, the first one of its kind in this section of the country, was to have been ready for operation the latter part of May.

**Fellowships Awarded**—The Gorgas Medical Society of New Orleans awarded honorary fellowships to Drs Arthur Vidrine for his work in surgery, Joseph Rigney D'Aunoy for his work on electrocardiography and Richard Ashman, Ph D, for achievement in research, with special ceremonies at Louisiana University Medical Center April 7. The awards are made to those "who have distinguished themselves in medical science and research," it was reported. Dr Vidrine is dean of the medical center. Dr D'Aunoy, professor of pathology and bacteriology and executive secretary of the center, and Dr Ashman, professor of physiology. These fellowships are the first to be awarded by this society, which was organized last year by Dr Clyde Brooks professor of pharmacology and experimental therapeutics at the center.

### MASSACHUSETTS

**Hospital Reunion**—Peter Bent Brigham Hospital, Boston held its annual reunion May 4-6. On the scientific program were the following physicians:

Henry A. Christian the address of welcome.  
Tom D. Spies Cleveland Recent Studies of Pellagra  
Cecil K. Drinker Experimental Lymphatic Obstruction in the Dog  
George R. Herrmann, Galveston, Texas Practical Augmentation of Diuresis by Combinations of Naloxines and Heavy Metals  
Eric P. Stone Providence R I Vegetative Nerve Disturbance of the Urinary Bladder  
Walter B. Cannon Recent Studies on Chemical Transmission of Nerve Impulses  
Reginald Fitz Cause of Death Among Recent Graduates in the Harvard Medical School Certain Needs for a Well Organized Department of Student Health in the Process of Medical Education  
Joseph T. Wearn Cleveland Circulation of the Heart  
Emil Goetsch Brooklyn Adrenal Factor in Reactions to Thyroidectomy  
Ashley W. Oughterson New Haven Phases of Studies of the Sympathetic Nervous System  
John F. Fulton Jr New Haven Spastic Primates  
Richard M. McKean, Detroit Clinical Application of the Micro-Internal Glucose Tolerance Test  
Louis G. Herrmann Cincinnati Experimental and Clinical Studies on Pulmonary Fat Embolism  
Vincent D. Vermooten New Haven Postural Drainage in the Treatment of Acute Pyelitis  
Courtney C. Bishop New York Repair of Kidney Wounds with Ribbon Gut  
John M. Fallon Worcester Trichiniasis as a Simulant of Intra-Abdominal Surgical Disease  
William deG. Mahoney New York, Anterior Lobe of the Hypophysis in Carbohydrate Metabolism

### MICHIGAN

**Bills Introduced**—S 242 proposes to authorize licensed physicians to prescribe such amounts of intoxicating liquors as they deem necessary to supply the medicinal needs of their patients. H 620 proposes to repeal the laws regulating the possession and distribution of narcotic drugs and to enact the uniform narcotic drug act. H 656 proposes to accord to hospitals maintained in whole or in part by private charity or operated by any municipal or county board, which treats persons injured through the fault of other persons liens on all judgments, claims, compromises or settlements accruing to the injured persons by reason of their injuries.

**Society News**—Dr Henry E. Michelson, Minneapolis addressed a joint meeting of the Wayne County Medical Society and the Detroit Dermatological Society, April 18 on cancer

of the skin.—Clinical conferences on tuberculosis were held at the Detroit Tuberculosis Sanatorium, April 18 and April 20, by Drs Willard B. Howes and Earl S. Bullock. A talk on 'History Taking and Physical Examination in Tuberculosis' and a clinical demonstration of physical signs in tuberculosis were presented.—Henry F. Vaughan, Dr PH, addressed a joint meeting of the Wayne County Medical Society and the East Side Medical Society, May 2, on "Medical Participation in Public Health".—Dr Carl E. Badgley, Ann Arbor, conducted a clinic and spoke on surgery of the knee joint before the Kalamazoo Academy of Medicine, April 18.—Dr Ward F. Seeley, Detroit, addressed the Calhoun County Medical Society, Battle Creek, May 2, on "Symptomatology and Treatment of Some of the Injuries Resulting from Childbirth".—A symposium on tuberculosis was presented before the West Side Medical Society, Detroit, April 6, speakers were Drs. Henry D. Chadwick, Richard H. Morgan and Edwards J. O'Brien.—At a meeting of the Highland Park Physicians Club, April 6, Dr Charles L. Brown, Ann Arbor, spoke on "Peptic Ulcer with Special Reference to Gastric Physiology and Diagnosis".

### MISSOURI

**Annual Spring Clinics**—The St. Joseph Clinical Society conducted its annual spring clinics, April 19-20. Sessions were held in the Hotel Robidoux, Missouri Methodist Hospital and St. Joseph's Hospital, St. Joseph. Guest speakers on the program included the following physicians:

Philip C. Jeans professor of pediatrics State University of Iowa College of Medicine, Iowa City Early Diagnosis of Tuberculosis in Children.  
William P. Wherry professor of otorhinolaryngology University of Nebraska College of Medicine Effect of Recent Research on the Control of Paranasal Sinusitis.  
John R. Caulk professor of clinical genito-urinary surgery Washington University School of Medicine, St. Louis, a banquet address on Cautery Punch Operation for the Removal of Prostatic Obstruction.  
Earl C. Padgett assistant professor of surgery University of Kansas School of Medicine Kansas City, Early and Late Treatment of Burns.  
Logan Clendenen professor of clinical medicine, University of Kansas School of Medicine Kansas City a banquet address on Treatment of Diabetic Coma.  
Leroy A. Calkins professor of gynecology and obstetrics University of Kansas School of Medicine, Treatment of Carcinoma of the Cervix—Technic and Results.  
Karl A. Menninger director Menninger Clinic, Topeka Surgery and the Neurotic Patient.  
Emisley T. Johnson pathologist, St. Joseph Hospital Kansas City Newer Forms of Scientific Research.  
Norman M. Keith Mayo Clinic, Rochester Minn. banquet address, Diffuse Arterial Disease with Hypertension.  
Alexis F. Hartmann associate professor of pediatrics Washington University School of Medicine, St. Louis banquet address Clinical Applications of Recently Acquired Knowledge Concerning Dehydration Edema and Chemical Changes in the Body.

### NEW JERSEY

**State Board Prosecutions**—The Board of Medical Examiners of New Jersey has recently reported the following convictions for violations of the medical practice act among others:

Chester Vliet, Ashbury Park, a chiropractor who exceeded his license by giving electric treatments paid the penalty for practicing medicine without a license.  
August Miller Millville a chiropractor, Scott H. Rosser, Bridgeton an osteopath and Ellsworth Pierce Bridgeton a naturopath were found guilty of practicing without licenses by the judge of the Cumberland County Court of Common Pleas.  
Jacob H. Schmitter Paterson found guilty of practicing medicine without a license, required his patients to become members of a homeopathic society incorporated in the state in 1897 the charter of which he had in his possession. He then treated them with drugs.  
Hester Armstrong Roselle Park pleaded guilty in the Linden District Court to a charge of practicing medicine without a license. She is said to have prescribed drugs some of which she manufactured.

**State Medical Meeting at Atlantic City**—The one hundred and sixty-seventh annual meeting of the Medical Society of New Jersey will be held in Atlantic City, June 6-9, at Haddon Hall. Sections will meet in the morning and general sessions will be held in the afternoons. The first general session will be devoted to a symposium on urology presented by Drs. Alexander Randall, Philadelphia, Joseph F. McCarthy, New York, Thomas C. Stellwagen Jr, Philadelphia, Stanley R. Woodruff, Jersey City, and William J. Carrington, Atlantic City. Guest speakers on other programs will include:

Dr. David Riesman Philadelphia, Disease of the Coronary Arteries.  
Dr. Albert S. Hyman New York, Electrocardiographic Work.  
Dr. Philip F. Williams Philadelphia Avoidable Factors in Maternal Mortality.  
Dr. Robert A. Cooke, New York, Causes and Management of Asthma in Children.  
Dr. Edward T. Donovan New York Abdominal Surgery in Infants and Children.  
Dr. John Mitchell Brush New York, Initial Stabilization of the Juvenile Diabetic.  
Dr. Meredith F. Campbell New York Surgical Diseases of the Upper Urinary Tract in Infants and Children.  
Dr. Harry E. Kleinschmidt New York Tuberculin Testing of Children.  
Edgar B. Burchell New York Anatomy of the Temporal Bone and Its Variations.

A new feature of the annual meeting this year will be an exhibit of fine arts and hobbies of members. Members of the physicians' families have also been invited to display their handiwork.

### NEW YORK

**Health at Utica**—Telegraphic reports to the U S Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended May 20, indicate that the highest mortality rate (18.2) appears for Utica, and that the rate for the group of cities as a whole is 10.6. The mortality rate for Utica for the corresponding period last year was 11.7, and for the group of cities, 11.4. The annual rate for eighty-five cities for the twenty weeks of 1933 was 11.8 as against a rate of 12.4 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

**Society News**—Dr William F MacFee, New York, addressed the Utica Academy of Medicine March 16 on "Prevention and Treatment of Postoperative Shock."—Henry F Vaughan, Dr P H, Detroit, addressed the Rochester Tuberculosis and Health Association and St. Mary's Hospital Clinical Society, Rochester, March 7-8 on public health and the economic depression.—A conference of health officers of Cavuga, Cortland, Onondaga, Seneca Oswego and Wayne counties was held in Syracuse, April 21. The principal topic discussed was scarlet fever. Among those who spoke were Drs George H Ramsey of the state department of health Gregory D Mahar and Orren D Chapman, Syracuse, and Robert Knight, Seneca Falls.—Dr I Newton Kugelmass, New York, addressed the Medical Society of the County of Albany, April 19, on 'Hemorrhages in the New-Born.' Dr Kugelmass also addressed students of Albany Medical College on "Hemorrhagic Diseases of Infancy and Childhood."

### New York City

**Society News**—Drs Frank H Lahey and Elliott P Joslin, Boston addressed the Medical Society of the County of Kings April 18, on "Carcinoma of the Colon and Rectum" and "Lessons from Diabetic Children for Diabetic Adults," respectively. A motion picture showing the mechanism of the heart beat in electrocardiography was also shown. Dr Henry M Moses presented the last of the society's Friday afternoon lectures May 5, on 'Management of Old Age Conditions.'—Dr John J Moorhead addressed the Medical Society of the County of Queens, May 5, on 'Problems in Traumatic Surgery' and Dr Robert T Frank April 21 on 'Recognition and Treatment of Infections of the Female Genital Tract.'—Drs Martin E Rehfuss, Philadelphia and Asher Winkelstein addressed the Society for the Advancement of Gastro-Enterology April 26, on "Smooth Muscle Function of the Stomach" and 'A New Therapy of Peptic Ulcer Continuous Alkalinized Milk Drip into the Stomach' respectively. Among others Dr Walter B Cannon Boston discussed the papers.—Dr Emil Goetsch addressed the New York Surgical Society May 8 on 'Hvgroma Cysticum Colli: An Analysis of Ten Cases.'—The New York Neurological Society met jointly with the section of neurology and psychiatry of the New York Academy of Medicine May 2. Dr Edwin M Deery presented a paper on 'Histological Features of Glioblastoma Multiforme.'—A symposium on bone tumors was presented before the Bronx County Medical Society, May 17 by Drs James Ewing, William B Coley and Ralph E. Herendeen.

### OHIO

**Cincinnati Alumni Reunion**—The annual reunion of graduates of the University of Cincinnati School of Medicine will be held Friday June 9. The scientific program will consist of demonstrations of the work of the cancer clinic and the vascular clinic. Arrangements have been made for golf at the Maketawah Country Club. The annual banquet will be at the Hotel Gibson with Raymond Walters, M A, president of the University of Cincinnati. Dr Richard Austin Mary M Emery professor of pathology and Dr Mont R Reid Christian R Holmes professor of surgery in the college of medicine, as the speakers.

**Society News**—Dr Foster Kennedy, New York, addressed the Cincinnati Academy of Medicine, May 22 on epilepsy.—Dr Halford F Conwell addressed the Cincinnati Obstetrical Society May 11 on 'Spasms of the Uterus.'—Dr Paul C. Langan presented a paper on 'Lung Pathology in Relation to Industrial Compensation' before the Summit County

Medical Society, Akron May 2.—Dr John F Beachler, Piqua, addressed the Miami County Medical Society April 14, on treatment of acute intestinal obstruction.—Dr Victor W Fischbach Cincinnati, among others, addressed the Adams County Medical Society West Union April 26, on 'Common Colds and Catarrhal Ailments.'—Members of the Toledo Academy of Medicine visited clinics especially arranged by the department of postgraduate medicine of the University of Michigan, May 17, at the University of Michigan Hospital, Ann Arbor. Dr Albert E Russell of the U S Bureau of Mines Washington, D C addressed the academy at its meeting May 5, on 'Occupation and Respiratory Diseases.'—Dr Willis C Campbell Memphis Tenn, addressed the Cleveland Academy of Medicine, May 19, on 'The Fracture Problem.' Dr Campbell also held a clinic on fractures at St. Luke's Hospital in the afternoon.—Dr George W Crile, Cleveland, addressed the Muskingum County Academy of Medicine Zanesville, May 3 on 'Peptic Ulcers and Exophthalmic Goiter' and on "Neurocirculatory Asthenia and Diabetes."—Dr Karl D Figley, Toledo addressed the Columbus Academy of Medicine, May 8, on diagnosis and treatment of hay fever.

### PENNSYLVANIA

**Society News**—Speakers at the meeting of the Allegheny County Medical Society, Pittsburgh, May 16, were Drs John W Shurer on "Goiter and Neurocirculatory Asthenia" Harry I Miller, 'Malignant Hypertension' Susan R Offutt, 'Female Sex Hormones—Therapeutics' and Robert M Entwistle, "Complications of Acute Appendicitis." The graduating class of the University of Pittsburgh School of Medicine and interns finishing their service in Allegheny County hospitals were guests at this meeting.—The annual meeting of the Ninth Councilor District of the Medical Society of the State of Pennsylvania was held at State Teachers College, Slippery Rock, May 18. Among the speakers were Drs John D Garvin, Pittsburgh, on 'Changing Concepts in the Treatment of Organic Indigestion' and Arthur P Keegan, Philadelphia, 'Past, Present and Future Concepts of Malignancy.'

### Philadelphia

**County Society Programs**—A child health program was presented before the Philadelphia County Medical Society, May 24 in cooperation with the Philadelphia Child Health Association. Dr John Lovett Morse, Boston spoke on 'The Requirements for a Minimum Diet' and Dr Joseph Stokes Jr, on 'Application of Minimum Nutritional Requirements to the Family Diet.' The society's program, May 17, was devoted to reports of thirteen subcommittees of the committee on medical economics.—Senior students of the University of Pennsylvania School of Medicine, Jefferson Medical College, Temple University School of Medicine and the Woman's Medical College of Pennsylvania were guests of the Philadelphia County Medical Society at a meeting April 27. Drs George Morris Piersol spoke on 'The Relation of the Physician to Medical Organization' Judson Daland 'Suggestions to Senior Medical Students Regarding Their Future in Medicine' and Francis Ashley Faught, 'The Recent Trend in Medical Economics.'

### RHODE ISLAND

**Society News**—At the meeting of the Rhode Island Ophthalmological and Otolological Society in Providence April 27, the speakers were Drs Jay N Fishbein on 'Rhinological Treatment of Asthma', Jeffrey J Walsh, 'Sinus Disease in Children' and Banice Feinberg, 'Relationship of Gastric and Pulmonary Symptomatology to Sinus Disease in Children.'—Drs David R Brodsky, Craig S Houston and John F Murphy, Providence, discussed 'Trichomonas Vaginalis Infection' and Dr Anthony Bassler, New York, "Clinical Significance of Pancreatic Disorders," at the meeting of the Providence Medical Association May 1.—Dr Soma Weiss, Boston, spoke on "Cerebral Arteriosclerosis" at the State Hospital for Mental Diseases Howard, April 17 and Dr Chester S Keefer, Boston, May 15, on 'Deficiency Diseases in Adults.'

### TENNESSEE

**Duplicate Diploma**—The University of Tennessee College of Medicine Memphis, reports the issuance of a duplicate diploma to Dr Vaughan C Price, McPherson, Kan, May 1. Dr Vaughan lost his diploma in a fire that recently destroyed the building in which his office was located. He was graduated in 1929.

**Society News**—Dr Joe E Hall, Greenback, addressed the Blount County Medical Society Maryville, May 4 on "Management of Normal Labor."—Drs Jay Arthur Myers, Min-

neapolis, and Hollis Johnson, Nashville, discussed tuberculosis at a meeting of the Gibson County Medical Society, Trenton in March—Dr Charles Sidney Burwell, Nashville, addressed the Sullivan-Johnson Counties Medical Society, Kingsport, April 4 on chronic heart disease—At a meeting of the Memphis and Shelby County Medical Society April 4, Dr Harry C Schmeisser, Memphis discussed Tuberculous Endophlebitis, and Edgar D Rose, dean University of Tennessee School of Dentistry, Memphis, 'Dental Infections and Their Relation to Systemic Disease.'—Dr Edgar L Grubb addressed the Knox County Medical Society, Knoxville, May 2, on "Bronchoscopy in Pulmonary Disease."—Drs James C. Fly, Kingston and Rolland F Register, Rockwood, addressed the Roane County Medical Society, Harriman, April 19, on "Tuberculosis in Tennessee" and Manipulation as a Therapeutic Measure," respectively—At a meeting of the McMinn County Medical Society Athens, April 20 Drs Howard P Hewitt and Talbert C Crowell, Chattanooga discussed 'Modern Practice of Obstetrics and Allergic Diseases,' respectively—Dr Worcester A Bryan Nashville, lectured on fractures at a meeting of the Robertson County Medical Society, Springfield April 18

### WASHINGTON

**Society News**—Drs Frank J Clancy and Cline F Davidson were speakers before the King County Medical Society Seattle, May 1, on Neuropsychiatry Applied to Urology and Sex and Internal Secretions respectively At the meeting, May 15 Dr James M Bowers Seattle presented 'A Clinical Study of Gastric Ulcers in Various Locations and Walter Kelton Seattle a discussion of Medicolegal Racketeering'—Dr Alexander H Peacock Seattle, president Washington State Medical Association addressed the Stevens County Medical Society Colville, April 25 on plans for care of the unemployed sick and Dr Herbert E Coe Seattle on the formation of a cooperative association of private and governmental hospitals

### WEST VIRGINIA

**Bill Introduced**—H 104 X proposes to authorize cities and incorporated towns among other things, to establish and maintain municipal hospitals

### WYOMING

**Joint Society Meeting**—Members of the Yellowstone Valley Medical Society were the guests of the Sheridan County Medical Society and the medical officers of the new Veterans' Administration Hospital Sheridan March 24 Addresses were presented by Drs Andrew F O Connor, on "Paresis and Other Forms of Neurosyphilis", Charles H Burdick 'Forms and Stages of Dementia Praecox', Joe H Price Jr "Type Cases of Mania and Mental Depression" and Thomas G McLin, 'Encephalitis Lethargica with Mental Symptoms'

### GENERAL

**American Proctologic Society**—The thirty-fourth annual session of the American Proctologic Society will be held in Chicago, June 12-13, at the Stevens Hotel, under the presidency of Dr Curtice Rosser, Dallas, Texas The scientific program includes the following speakers

Dr Jacob A. Barger Rochester Minn Colonic Function  
Arthur I Kendall Ph D Chicago Intestinal Flora  
Dr Homer H Wheeler, Indianapolis Anesthetics in Postoperative Treatment of Rectal Diseases  
Dr Martin J Synnott, Montclair N J Diverticulitis  
Dr Martin S Kleckner Allentown Pa Coccygodynia—Present Day Interpretation and Treatment  
Dr Curtis C Mechleng Pittsburgh Comments on Pectinosis  
Dr Harry E Bacon Philadelphia The Gruskin Test for Cancer

**Health Education Conference**—The American Child Health Association will conduct its seventh health education conference in Ann Arbor, June 20-24, at the invitation of the University of Michigan Discussions will center on practical problems in the school health program in teacher secondary and elementary education Objectives of the conference are to

Chart significant trends and characteristics in school health programs  
Clarify problems of basic significance which apparently retard the future growth of programs  
Formulate through group thinking sound principles and unified policies of practical constructive value.

Further information may be obtained from Miss Anne Whitney, director educational service, American Child Health Association, 450 Seventh Avenue, New York.

**Medical History Meeting**—Dr James B Herrick, Chicago, was elected president of the American Association of the History of Medicine at the annual meeting in Washington D C., May 8, succeeding Dr Gerald B Webb, Colorado

Springs, Colo Drs Charles N B Camac, New York, and William S Middleton, Madison, Wis., were elected vice presidents and Dr Edward J G Beardsley, Philadelphia secretary The program included addresses by Drs William G Leaman, Jr, Philadelphia on "Tobias Smollett, MD Physician and Novelist", Maude E L Abbott, Montreal, "Evolution of Medical Journalism in Canada", Henry E Sigerist, Baltimore, "Medical Literature of the Middle Ages," and Logan Clendenning, Kansas City, "The Dear Little Boy (Edward Wortley Montagu, Jr)"

**Conference on the Hard of Hearing**—The fourteenth annual meeting of the American Federation of Organizations for the Hard of Hearing will be held in Chicago June 19-22, with headquarters at the Lake Shore Athletic Club Among speakers listed on a tentative program are

Dr Wendell C Phillips New York Relation of the Activities of the League to Health  
Dr Edmund P Fowler New York Variations in the Hearing with Otosclerosis Etiology Prognosis and Treatment  
Dr Horace Newhart, Minneapolis The Hard of Hearing School Teacher  
Dr Gordon Berry Worcester Mass, How I Behave as I Grow Hard of Hearing  
Allan Winter Rowe Ph D Boston Incidence of Hearing Failure in Children of Rural Communities  
Dr George E Shambaugh Jr Chicago Progressive Deafness in Identical Twins.

Dr Morris Fishbein, Chicago, editor of THE JOURNAL will participate in a publicity clinic, Tuesday afternoon, June 20 The annual banquet will be held Thursday evening, with Jane Addams of Hull House and Dr Wendell Phillips as speakers

**Conference on Rheumatic Diseases**—The American Committee for the Control of Rheumatism will sponsor its second conference on rheumatic diseases at the Hotel Schroeder, Milwaukee June 12 Abstracts of papers will be presented by the following physicians

Chester S Keefer and Walter K Myers Boston Incidence and Pathogenesis of Degenerative Arthritis  
Ralph K Gormley Rochester Minn Joint Tissue Changes in Chronic Atrophic (rheumatoid) Arthritis with Special Reference to the Early Stages  
Walter Bauer Boston Physiology of Normal Joints as Related to Chronic Atrophic (rheumatoid) Arthritis  
Martin H Dawson and Ralph H Boots New York, Studies in Chronic Arthritis (bacteriology agglutination and sedimentation tests and vaccine therapy)  
Andrew A Fletcher Toronto Nutritional Aspects of Chronic Arthritis  
John A. Key St Louis Contusions of Cartilage as an Etiological Factor in Chronic Arthritis  
William J Kerr San Francisco The Common Denominator in Most Methods of Treatment of Chronic Arthritis  
George R Minot Boston General Aspects of the Treatment of Chronic Arthritis  
Philip S Hensch Rochester The Analgesic Effect of Hepatitis and Jaundice (from cinchophen and other causes) in Arthritis Fibrositis and Sciatic Pain Preliminary Report.

**Bequests and Donations**—The following bequests and donations have recently been announced

Winona General Hospital, Winona Minn the bulk of a \$200 000 estate by the will of the late John Dietze president of the hospital board since 1920  
Norwegian Hospital Brooklyn \$2 500 by the will of Mrs. Emma C. Normann.  
Montefiore and Mount Sinai hospitals New York \$5 000 each under the will of the late Elias Kemper  
Murray Hill Sanitarium and Mount Sinai Hospital \$10 000 each under the will of the late Selma Rossman  
Somerset Hospital Somerville N J \$10 000 by the will of William Morgan Savin  
Shrine Hospital for Crippled Children Minneapolis \$10 000 by the late Mr E A Gowan.  
Memorial Hospital Pawtucket R I \$10 000 given by Mrs Kenneth F Wood in memory of her parents  
St. Luke's Hospital Davenport Iowa, \$1 000 under the will of the late Mrs. Lena Anken  
Manhattan Eye Ear and Throat Hospital New York \$5 000 under the will of the late Norman Henderson  
Montefiore and Mount Sinai hospitals New York \$1 000 each by the will of William J Spiegelberg  
Shriners Hospital for Crippled Children Chicago \$1 000 by the will of the late Anton J Cermak.  
St. Luke's Hospital New York more than \$1 000 000 from the estate of Miss Laura Shannon  
Central Dispensary and Emergency Hospital Washington, D C \$50 000 from the estate of Simon Kann  
St. Margaret's Hospital Kansas City \$10 000 from the estate of Langdon Bacon  
Fairview Hospital Great Barrington Mass \$2 000 from estate of Charles S Rackemann  
Children's Mercy Hospital Kansas City \$25 000 from the estate of John M. Butler  
Menorah Hospital Kansas City \$25 000 from the estate of Dr John S Lichtenberg  
Methodist Episcopal Hospital Brooklyn \$20 000 from the estate of William L. Feller  
Olean General Hospital Olean N Y \$30 000 from the estate of Melville C. Follett.  
Emanuel Hospital Portland Ore \$8 000 by the will of Carl A Carlson

**Society News**—Dr Arno B Luckhardt, Chicago, was elected president of the Federation of American Societies for Experimental Biology at its annual meeting April 12, and

Dr Frank C Mann, Rochester, Minn., secretary. These men hold the same office in the American Physiological Society. The next annual meeting of both organizations will be in New York.—W M Clark, Ph.D., Baltimore, was named president of the American Society of Biological Chemistry, April 10, and Henry A Mattill, Ph.D., Iowa City, secretary. New York was designated as the place for the next annual meeting.—The American Association of Anatomists will hold its next annual session in Philadelphia, March 28-30 1934. George E Coghill, Sc.D. Philadelphia, and George W Corner, Rochester, New York, are president and secretary, respectively.—Dr Carl V Weller, Ann Arbor, was installed as president of the American Society for Experimental Pathology at its annual meeting, April 12. Dr Simeon Burt Wolbach, Boston, was named president-elect, and Dr Charles Philip Miller, Jr., Chicago, reelected secretary. The next annual session will be in New York.—The annual meeting of the American Home Economics Association will be held in Milwaukee, June 26-30. Dr Morris Fishbein, Chicago, editor of *THE JOURNAL*, will address the association, June 28, on "Evaluation of Proprietary Foods."

### CANADA

**Personal**—Dr William H Hill, Edmonton, has been appointed medical health officer of the city of Calgary and superintendent of the Calgary General Hospital to succeed Dr Duncan Gow.—Dr James B Collip, professor of biochemistry, McGill University Faculty of Medicine, Montreal, has recently been elected a Fellow of the Royal Society of London.—Dr Louis de L Harwood, dean of the University of Montreal Faculty of Medicine has been appointed superintendent of the Radium Institute of the Province of Quebec.—Dr Angus D McLachlin a 1932 graduate of the University of Western Ontario Faculty of Medicine, London, has been awarded a Rhodes scholarship to spend three years at Oxford University, England, where he will study physiology.

**Annual Meeting of Canadian Medical Association**—The sixty-fourth annual session of the Canadian Medical Association will be held in St John N B, June 19-23 under the presidency of Dr George A B Addy and with headquarters at the Admiral Beatty Hotel. The first two days will be devoted to meetings of the council and the scientific program will begin Wednesday, June 21. Among speakers listed on the program are

Sir Humphry Rolleston England British Pioneers in the Treatment of Tuberculosis  
Prof Lyle Cummins Cardiff, Wales Blood Changes Noted in Tuberculosis.  
Dr Alan G Brown, Toronto Importance of a Correct Diet in Childhood  
Dr Frank H Lahey Boston Gout  
Dr Herbert K. Detweiler Toronto The Role of Allergy in Disease

Dr Robert Muir, Glasgow, Scotland, will deliver the Lister Oration, which is open to the public, Wednesday evening

### LATIN AMERICA

**New Surgical Society**—The Mexican Academy of Surgery was recently formed with the following officers: Drs Gonzalo Castañeda, president, Luis Rivero Borrell and Manuel Gea Gonzalez, vice president, and Manuel A Manzanilla, secretary

### PUERTO RICO

**Personal**—Drs Ramon M Suarez, San Juan, and Manuel Guzman Rodriguez Mayaguez, have been appointed members of the Board of Medical Examiners of Puerto Rico succeeding Drs Alfredo Ortiz Romeu, San Juan, and Manuel A Astor, Arecibo

### FOREIGN

**Typhoid Epidemic**—Four hundred persons have died in a typhoid epidemic in Siberian regions contiguous to the Manchurian border, according to the *Chicago Tribune*, April 26. The disease was said to be spreading toward Manchuria. Manchurian authorities have quarantined the frontier.

**British Medical Association**—The one hundred and first annual session of the British Medical Association will be held in Dublin, July 21-29. The annual representative meeting will begin Friday, July 21, and continue the next three week days. The annual general meeting will be held Tuesday afternoon, July 25 and the scientific sessions will occupy the next three days. Saturday, July 29 will be devoted to excursions to places of interest. Dr Thomas G Moorhead, regius professor of physic, Trinity College, Dublin, is the incoming president of the association.

**University of Zurich Limits American Students**—Entrance requirements for American students who wish to

enter the University of Zurich Faculty of Medicine, Zurich, Switzerland, have been made more strict, according to an announcement sent by the rector of the university to the United States Department of Education. Prospective students must now present a diploma of graduation from a recognized college or university transcript of college records only students who have received A or B ratings, or at least 80 points, being acceptable a certificate as to sufficient knowledge of German, and a declaration that the student has not been refused admission to a recognized American university.

**Society News**—The thirteenth International Neurologic Reunion was held in Paris, May 30-31, at the Salpêtrière. Subjects discussed included cerebral and spinal serous meningitis and exploration of the cerebral cavity by injections of air.—The Hungarian Ophthalmological Society has recently named the following American physicians honorary members: Drs Harvey Cushing, Boston, George E de Schweinitz, Philadelphia, Edward V L Brown and William H Wilder, Chicago and William H Wilmer, Baltimore.—The third International Congress for Experimental Cytology will be held in Cambridge, England, August 21-26. The following subjects will be discussed: cell respiration and metabolism, cell form and function as demonstrated by recent advances in tissue culture, electrophysiology of the cell, mechanics of development, and cultivation of animal and plant viruses.

**International Hospital Congress in Belgium**—The third International Hospital Congress will be held in Knocke-sur-Mer, Belgium, June 28 to July 3. Reports of ten international study committees will form the basis for discussions. Their subjects include construction, equipment and technic, administration and housekeeping, finance and bookkeeping, legislation, care of the patient in the hospital, patients' food, personnel, statistics and outside connections with the hospital. Any resolutions adopted will be passed on to the League of Nations and the governments concerned. Following the congress, a five days study tour of Holland has been arranged by the Dutch Hospital Association to visit hospitals and places of interest, July 4-9. Detailed programs may be obtained from Messrs W Kohlhammer, Verlag, Urbanstrasse 12/16 Stuttgart, Germany. Communications concerning the congress should be addressed to Dr W Alter, Ernst Ludwig Allee 2, Buchschlag, Hessen, Germany.

**Status of Jewish Physicians in Germany**—The following items are taken from recent issues of German weekly publications. Twenty professors at Oxford and Cambridge wrote to the London *Times* protesting against the dismissal of Bernhard Zondek because of his being Jewish. They emphasized the fact that they acted on scientific principles only because through Zondek German science had risen to fame.

Because of the law regarding officials and other laws, the Prussian Minister of Culture gave leaves of absence to Dr Hermann Freund, professor of pharmacology at Münster. Dr Carl Prausnitz, professor of hygiene, and Dr Hans Winterstein, professor of physiology at Breslau, Dr Theodor Meyer-Steinig, associate professor of the history of medicine and Dr Hans Simmel, associate professor of internal medicine at Jena.

It is reported that Geh-Rat Prof Dr Ferdinand Blumenthal the accomplished director of the Cancer Institute at the University of Berlin, has asked to be released from his office.

On the basis of the law regarding officials, the following were granted leave of absence from the University of Berlin: Dr Karl Birnbaum, professor of psychiatry, Dr Franz Blumenthal, professor of dermatology. Dr Hans Friedenthal, professor of physiology. Dr Friedrich Franz Friedman, professor of tuberculosis research. Dr Peter Rona, professor of physiology and Dr Konrad Cohn docent in dentistry. Dr A Wolff-Eisner, professor of internal medicine, was dismissed from teaching. Geh-Rat Dr Moritz Borchardt, former director of the surgical department of the Moabit Hospital was replaced by Prof Dr Wilhelm Baetzner. Prof Dr Schück, director of the city hospital in the urban district, was given a leave of absence.

Dr Wilhelm Peters professor of psychology at Jena was dismissed and was replaced by Prof Dr Annelies Argelander.

Dr Emil Klein professor of dietetics and natural therapy at Jena, was dismissed and was replaced by Prof Julius Gröber.

Dr S Rosenbaum, chief physician of the University Pediatrics clinic in Leipzig, was granted a leave of absence.

### Deaths in Other Countries

Joseph Priestley Smith, emeritus professor of ophthalmology University of Birmingham, England, died, April 30, aged 87.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 6, 1933

#### Thomas and Jones

The obituaries of Sir Robert Jones did not give due credit to his great inheritance from his uncle and master, Hugh Owen Thomas, or indicate how his work though full of originality and beyond all praise, was but a development of that of the latter. In the history of surgery, Thomas stands out as a heroic figure. A general practitioner among the poor of Liverpool dockland, without the advantage of any hospital appointment, he revolutionized the treatment of tuberculous joints. For a time he was ignored by the surgical authorities of his day, but this meant nothing to him. Devoid of vanity or ambition and devoted to his work, he was concerned only in developing his methods and benefiting his patients. But he did not hide his scorn of surgeons. With his usual penetrating criticism Lord Moynihan says of him "He knew little of pathology and appeared to have been either ignorant of, or at least uninterested in the appearance of diseased or deformed parts as seen during operation or after death. But of the changed appearances and function of morbid bones or joints, of the means other than operation to be used to aid nature in its efforts at restoration, no man ever knew so much. To the principle of rest he gave a meaning extending far beyond that of Hilton."

As a means of ensuring prolonged rest, for the treatment of tuberculous joints, he invented the most perfect splint ever known. His knee splint is designed to prevent movement of the knee and yet leave the joint uncompressed and the circulation unhindered. In the war its use for the treatment of fractures of the femur had to be taught again by Jones and Major Maurice Sinclair. Jones described Sinclair's Fracture Hospital as "the last word in military surgery." In his book on 'Fractures,' a product of the war, Sinclair refers to Thomas's splints as 'the greatest advance in the treatment of fractures in modern times' and as 'instruments so perfect that all modifications do but reduce their efficacy.' They have indeed rendered the name of Thomas immortal. However, it is generally forgotten that they were not merely the work of a clever mechanic but the means of putting into practice the principles of one of the most original and independent minds. Thomas was the first to insist on the need of keeping the paralyzed muscles relaxed in poliomyelitis. In 1876 he described under the name of 'damming' what English and American surgeons call Bier's treatment though this dates from 1903. He was among the first to use percussion for ununited fractures. He anticipated, as Keith points out, Wolf's law of the influence of strain on bone. His work was entirely original, he derived nothing from predecessors in orthopedic surgery. His grasp of principles and his skill in applying them were extraordinary. In his appreciation of the fundamental principle that nature is always the healer he is compared by Keith to Hunter.

As a boy, Jones spent his holidays among the lathes and carpenter's benches where Thomas was working, and from the age of 16 when he became a medical student, helped him in his practice. The association continued until 1891, when Thomas died and Jones was 33. In his further career Jones so to speak, stood on the shoulders of Thomas. He had the same extraordinary grasp of principles as Thomas but also the opportunity for extending them to the field of operative surgery. The two form a combination unique in the history of surgery and their achievements must be regarded as forming a single whole, the uncle's life being prolonged, as it were in the nephew's. Jones has been called "the greatest orthopedic sur-

geon of all time," but, paraphrasing Swinburne's comparison of "George Eliot" and Charlotte Brontë, it may be said "Jones was the greater surgeon but Thomas the greater genius."

#### Treatment of Chronic Typhoid Carriers

The Medical Research Council has published a report by Prof. C. H. Browning and others on research done in the pathologic department of Glasgow University on chronic typhoid carriers. A considerable proportion of typhoid convalescents are temporary carriers. Carriers are divided into fecal and urinary, according to the habitat of the persisting organisms. In the majority of fecal carriers the bacilli live in the gall-bladder, which is usually more or less inflamed. Urinary carriers excrete the bacilli intermittently. Though usually there is no pyuria, the bacteriuria is probably due to focal infection of the kidney and rupture into the renal tubules of minute abscesses. When the bacilli persist in the urine something pathologic in the urinary tract, such as malformation or calculus, is the rule. Typhoid and paratyphoid bacilli may persist also in subcutaneous abscesses, periostitis and osteomyelitis. Nonsurgical treatment with intestinal antiseptics, vaccines and bacteriophages and by dietetic methods, to alter the reaction and flora of the intestine, have all been unsuccessful. On the other hand, when the gall-bladder was the site of infection, operation on that organ has given good results. Three chronic carriers were thus cured at the Western Infirmary, Glasgow.

#### The German Persecution of Jewish Physicians

The British Medical Association has received letters from Jewish physicians in Germany inquiring as to the prospects of medical practice in Great Britain. In an editorial, the *British Medical Journal* expresses sympathy but points out that there is no medical reciprocity between Germany and Great Britain. Qualifications in one country give little or no privilege in another. Hence German diplomas are not registrable here. In replying to correspondents, the medical secretary of the association states that two conditions must be fulfilled by colleagues who can no longer practice freely in Germany. First, they must obtain a British qualification, with all that that entails, second, they must comply with the requirements of the aliens act. In the ordinary way, permission is readily given to reputable foreigners who wish to pursue medical studies here. But the official procedure might change if many applications came from one country, and the attitude of the medical schools and examining bodies would also have to be reckoned with. The English friends of these unfortunate physicians whose eyes were now turning toward England would do well to ascertain the views of the government before holding out encouragement to them.

#### British Spas

For years, it has been a custom for wealthy invalids to resort to spas on the European continent which offered attractions of various kinds not found at home. But in this period of unprecedented financial depression a movement arose to endeavor to keep our invalids at home, and the British Health Resorts Association was formed to improve our spas. At a meeting of the association at Leamington Spa, Lieutenant Colonel Byam, lecturer on tropical hygiene at St. George's Hospital, suggested that for the tropical invalid every spa should not claim to cater that some specialization was necessary. Dr. P. H. Manson-Bahr, physician to the Hospital for Tropical Diseases, urged that every case of tropical disease be investigated before spa treatment was begun. The ordinary spa treatment was quite unsuitable for the acute stages of sprue, amebic dysentery, malaria and the main tropical diseases. The necessity for a physician experienced in the subject was paramount. Lord Horder opened a discussion on the treatment of circulatory diseases at spas. He considered that at present spa facilities in England were scanty. The spas of this country

were quite capable of giving the requisite treatment, but specialization was essential. In heart cases, complete rest physical and emotional was paramount. This the foreign spas could guarantee. It was an anomaly that British medicine, which had led the world in the last twenty-five years in regard to cardiovascular diseases, should allow its patients to go to Nauheim and other foreign spas. Dr J Strickland Goodall (cardiologist) said that there was no reason why British spas should not be able to give all the treatment available on the continent. He suggested that special provision should be made at the spas for orthodox Jews who had until lately gone to Nauheim.

## PARIS

(From Our Regular Correspondent)

April 19, 1933

### Treatment of Arthritis Deformans

Before the Société de chirurgie, Mr Simon of Strasbourg described recently an original method of treatment for arthritis deformans with which he has secured excellent results. While observing in Strasbourg results that Leriche secured in these cases by performing parathyroidectomy, he noticed that, in some cases in which the surgeon had not found the parathyroid glands, the operation was nevertheless successful. From this fact he concluded that mere surface irritation of the thyroid, during prolonged operative maneuvers, played a part in these ameliorations. Furthermore, he assumes that thyroid insufficiency is often a cause of arthritis deformans. This conclusion was the point of departure for the method that he devised. He exposed the thyroid with a simple incision and painted the surface with a phenol solution. In ten cases with one exception, he secured an immediate considerable amelioration of the rheumatism. The patients recovered the normal amplitude of movements and the pain subsided. With regard to the movements the amelioration was only transitory, but the pain, although it returned, was much more easily borne than before.

### Conjugal Tuberculosis

The Assemblée générale de la médecine française, which meets in Paris two or three times a year and is made up of physicians who come from all departments of France, shows indications of becoming one of the most important learned societies of France. The amount of documentary evidence that is presented has much greater value than the isolated observations collected by the heads of hospital departments. The observations presented are made among various groups of clients in a family environment, the elements of which are well known to the practitioner through contacts extending over several years. The topic studied by the last assembly was 'Conjugal Tuberculosis.' Conjugal tuberculosis—that is the infection of one spouse by the other—is undeniable. Such infection is not, however, inevitable and is observed in only 10 per cent of the couples of which one spouse is tuberculous. One often discovers after the death of the affected spouse signs of latent tuberculosis in the survivor. The spouse who is tuberculous is nearly always found to have tuberculous antecedents. Resistance to contagion increases with age, and, in the cities especially, the subject tends to acquire a degree of immunity. Young women brought up in mountain regions who come to the cities and marry, furnish a large proportion of the cases of conjugal tuberculosis. Such cases are more rare in some regions—for example, the Provence and the Bearn where tuberculosis is not as common as elsewhere. There are a great many more widowers than widows as a result of the death of a tuberculous spouse, in the center of France. In Brittany the reverse is true, possibly because of the greater frequency of alcoholism among the male population. In general, women are more frequently affected with tuberculosis during conjugal life. Early tuberculosis following marriage is often

observed and usually develops rapidly. Pregnancy is generally regarded as an aggravating factor. Likewise, the serious menace of contamination for young children brought up in a home in which one of the parents is tuberculous, unless such children were inoculated with the BCG vaccine soon after birth, was emphasized. Contamination among married couples is the exception whereas contamination of the child is the rule. The assembly, before adjourning, adopted unanimously the following resolution:

Recognizing that the contamination of the adult is rare but does exist the institution of prophylactic measures is in order but the protection of young children should be intensified in view of the extreme danger of contamination.

The following topics were selected for the next meetings "The Future of Pleuritics," "The Frequency and the Present Physiognomy of Syphilis," "Convulsions in Children and Their Remote Prognosis," and "Goiter in France."

### Prophylaxis of Deafmutism

Dr A Malherbe, chief physician of the Institut national des sourds-muets in Paris, surveys in the *Bulletin médical* the results of his long experiments. In his opinion, the deafmute is only the deaf person who has lost his hearing when under 7 or 8 years of age. He does not speak because of his inability to recognize spoken words, as he does not hear them but the cerebral speech center he still possesses intact. If the lesion of the ear causing his deafness develops around age 7, although he has learned to speak he soon loses the use of spoken language. If the lesion intervenes after age 7 or 8, he may no longer hear but may continue to speak, making use of such words as he has learned. Congenital deafness constitutes scarcely a third of the cases and affects chiefly males. Among the causes of nervous atrophy, he cites malformations of the auditory apparatus, in which the role of hereditary alcoholism, and congenital tuberculosis and/or syphilis is unquestionable. The effects of consanguinity have been greatly exaggerated. Only morbid consanguinity can be incriminated. Among the causes of early acquired deafness, leading almost certainly to deafmutism, the author mentions cerebrospinal meningitis, convulsions, scarlet fever, measles, numerous infections of the rhinopharynx involving the ear, and traumatism. Malherbe calls attention to a neglected cause of deafness arising during the first days after birth. At birth the tympanic cavity is filled with a mass of mucus, which is resorbed only gradually and constitutes an excellent area for the development of microorganisms coming from the rhinopharynx. This infection goes on quietly, for the tympanum is never perforated. Nevertheless, it brings about the denudation of the ossicles and grave and permanent changes of the labyrinth leading to deafness. The author considers disinfection of the rhinopharynx at birth the best preventive measure against deafmutism just as disinfection of the conjunctivae is resorted to, to prevent ophthalmia in the new-born.

### The Old Headquarters of the Academy of Medicine

The old headquarters of the Academy of Medicine, in the rue des Saints-Peres, which were abandoned thirty years ago for the new magnificent quarters that it now occupies in the rue Bonaparte, have been undergoing some much needed repairs. The discoveries that have been made in the old quarters occupied by the academy for ninety years awaken surprise. The small hall in which the council met had a low ceiling and presented a paradoxical state of uncleanness. When the academy moved to its new quarters, the old dusty carpet that covered the floor of this sanctuary was taken up. Under this carpet was found another carpet also worn and even more dusty than the top carpet. Under the second carpet was found a third, and, the excavations being continued ten old carpets none of which appeared to have been ever subjected to a cleaning process, during the time that successive generations of venerable

savants—from Depuytren to Pasteur and Dr Roux—had passed over them, were removed! What a haunt for streptococci, staphylococci and tubercle bacilli the Academy of Medicine had become! And from these environs were promulgated by the great apostles of hygiene the far-reaching precepts of antiseptics. However, they all died at an advanced age, without their health having been impaired in the slightest by this uncleanness. But they spent only a few hours each week in this environment.

## BERLIN

(From Our Regular Correspondent)

May 12, 1933

### Research on Roentgen Rays and Light

The Deutsche Röntgengesellschaft and the Deutsche Gesellschaft für Lichtforschung held recently a joint session in Bremen. The Rieder gold medal was awarded to Prof Alban Köhler of Wiesbaden, who has become widely known through his work on "Die Grenzen des Normalen und die Anfänge des Pathologischen im Röntgenbild." Considerable time was devoted to papers and discussions on the roentgenologic diagnosis of the cranium and of the central nervous system, particularly with respect to their value for neurology, internal medicine and surgery. In this field Peiper of Frankfurt-on-Main presented a paper on "The Contrast Method in Neurology," Löhr and Jakob of Magdeburg on "Arteriography of the Blood Vessels of the Brain," Wustmann of Düsseldorf on "The Contrast Method as Applied to the Central Nervous System," and des Plantes of Utrecht on "The Roentgenologic Examination of the Cranium." A number of the papers were devoted to the roentgenologic diagnosis in obstetrics. The prognosis of the course of a birth has become more certain through roentgenologic diagnosis. Interesting details on these questions were furnished particularly by Gauss of Würzburg, Schultze of Berlin and Schaefer of Göttingen. Special attention may be directed to the paper of Boedeker of Bremen on roentgenologic serial examinations for the diagnosis and treatment of pulmonary tuberculosis. Particular interest attaches to the paper of Holthusen of Hamburg on ray therapy as applied to malignant tumors. He demands unconditionally roentgenologic penetrating treatment postoperatively in order to kill the scattered cancer cells. In cases in which operative treatment is not possible, primary penetrating roentgen treatment in combination with radium is exceedingly important. Engelmann of Hamburg reported the results of three years' experience with radium in the treatment of the upper respiratory passages. Rajewski of Frankfurt-on-Main brought out that tissue cultures, particularly in the hanging drop, offer good opportunities for the study of the effects of various kinds of rays on the cells. Glocker of Stuttgart discussed the "Physical Bases of the Biologic Effects of Rays" and emphasized the importance of the constitution of the individual with reference to reactions to roentgen rays.

The session of the Deutsche Gesellschaft für Lichtforschung brought out a thorough discussion of ray treatment in tuberculosis. The topic was introduced by Bernhardt of Saint Moritz, the founder of light therapy in mountain regions, while Stühmer of Münster spoke on the organization of lupus treatment. Lomholt of Copenhagen reported on light therapy of lupus, after the method of the Finsen Institute, by the application of concentrated carbon arc light, in which the infra-red heat rays, which damage the skin, are filtered out, while the ultraviolet heat rays are directed to the diseased area of the skin through a quartz lens that allows them to pass. That in low regions the application of natural available light rays will accomplish similar results to those reported for mountain regions was stressed by Schultze of Giessen. Holfelder of Frankfurt-on-Main spoke on the differentiation of roentgenologic and surgical treatment in tuberculosis of the bone.

## The Adaptability of the Nervous System

Prof A. Bethe, an authority in physiology at the University of Frankfurt-on-Main, spoke recently before the Berlin Verein für Innere Medizin on the topic "Adaptability of the Nervous System." By plasticity Bethe understands the quality of adaptation to momentarily prevailing conditions. The organism is constantly subjected to new conditions. After experimental exchange of the points of insertion of antagonistic muscles, and after crosswise healing of nerves of different functions—the normal motions, reflexes and sensations are gradually restored, although the central connections are now entirely different from what they were naturally. From this observation it is evident that the normal central innervation areas do not possess a specificity. Other experiments show that the previous assumption of the existence of preformed coordination centers can scarcely be upheld. Further proof is found in the fact that the coordination of the movements of locomotion, which is so firmly established and which appears so specific in all animals, is changed at once and in the most diverse ways if one or more extremities are removed. A dog without front legs adopts a locomotion similar to that of the kangaroo, while a dog without hind legs walks on his front legs. These happenings in the nervous system cannot be understood on the basis of the previous assumption, namely, of reflexes controlling isolated areas existing side by side. A more plausible assumption is that the whole nervous system, with the entire innervated periphery, constitutes one unit, and that every stimulation extends more or less throughout the nervous system. In spite of the large amount of material available, only the first steps in reorganizing our conceptions of the mechanism of central happenings have been taken as yet. That a revision of our views of the *modus operandi* of the nervous system is necessary can hardly be denied in the face of the many recent observations.

During the general discussion, Professor Goldstein, a neurologist and formerly an ordinarius at the University of Frankfurt, said that also in human pathology the endeavor to restore the unity of the organism is demonstrable. In hemianopia, loss of vision affects only the perimeter of the visual field, which remains almost complete. This modification can be shown by the fact that through a slight turning of the eye no longer the macula but another portion of the retina becomes the place of keenest vision. Professor Kramer, chief physician of the Berlin Neurologische Universitätsklinik, pointed out that there is an important exception in the exchange of nervous functions. The facial nerve cannot be replaced by the accessorius. Movements of the muscles originally controlled by the accessorius continue to occur along with the other movements, and the motions of mimicry are not restored to their original form. Possibly this exceptional status of the facial nerve can be explained by its relation to the external world.

## ITALY

(From Our Regular Correspondent)

March 15, 1933

### Congress on Rheumatism

At the third International Congress on Rheumatism, Professor Sante Pisani of Florence spoke on chronic rheumatism, designating two types of manifestations: chronic polyarticular rheumatism secondary to acute polyarticular rheumatism, and primary chronic polyarticular rheumatism. The former is a prolonged form of the acute type, the establishment of chronicity is heralded by the persistence of the changes in the general condition and by pains in the joints. Primary chronic rheumatism differs from the preceding type in that it is never associated with cardiac localizations. It is preceded by premonitory symptoms (changes in the general condition) and is sometimes manifested at the start by severe but transitory

inflammatory attacks, which produce articular deformations after a long period

Professor Frugoni of Rome brought out that in the genesis of tuberculous rheumatism, as in other infectious forms of rheumatism, there intervenes a factor of nonspecific hypersensitiveness of the tissues, as recently demonstrated by Chini and Magrassi. The peculiar affinity of each virus is responsible, to a certain extent, for the localization and the evolution of the lesions

#### A New Medicosurgical Society

The Società medico chirurgica Veneziana recently founded, held a meeting under the chairmanship of Prof. G. B. Fiocco, at which papers on many subjects were presented

Magni spoke on the results of some 2,000 vaccinations against diphtheria, with reference to vaccination with a single dose of anatoxin. Applying the original technic of Ramon, with three successive doses of anatoxin, the speaker obtained in 256 children, who out of 1,174 had presented a positive Schick reaction, a negative reaction, sixty days later, in 90.5 per cent of the cases so treated. To 195 Schick-positive children (out of 256) the speaker applied Termi's anatoxin, injecting 1.5 cc. (45 units) at one time and secured, after forty-five days, a Schick-negative test in 87 per cent of the cases

Lolli spoke on the Löwenstein method in tuberculous bacillemia. This method reveals the presence of bacillemia in 80 per cent of the cases of tuberculosis, in tuberculous rheumatism, and also in multiple sclerosis, which is contrary to the beliefs held by many Italian and foreign authors. The speaker carried out research in eight cases of tuberculous meningitis, three cases of acute miliary tuberculosis, three cases of rheumatism, and one case of active tuberculosis of the bone. He used the various culture mediums of Löwenstein, comparing them with the culture medium of Petraghani. He obtained no blood culture positive for tubercle bacilli, and he found the culture medium of Löwenstein inferior to that of Petraghani for the cultivation of the bacilli of tuberculosis

Polichetti presented his observations in a rare case of Dupuy's disease, in a patient aged 37, who had suffered a torsion of the right shoulder resulting from a sudden movement. Six years later, he developed lymphangitis of the arm and adenitis of the right axilla with pain in the shoulder and restriction of movement. A roentgenogram revealed an irregular shadow above the head of the humerus, the objective examination showed hypotrophy of the muscles, particularly of the deltoid, but without tumefaction or fever. The calcified focus having been removed surgically, a recovery was effected in thirty-five days

Mozzetti and De Marchi experimented with the action of the follicular fluid in guinea-pigs and rabbits subjected to subtotal ovariectomy and were able to note a frank positive reaction of the cervical stump. They demonstrated in this manner that the hormone action of the follicular fluid affects not only the uterus as a whole but also certain segments (for example the cervix). The speakers saw in the experimental results secured an explanation of certain revivifying manifestations noted in the stump of persons subjected to subtotal hysterectomy, concomitant with the menstrual cycle

Leuti spoke on so-called pleural stones, describing a rare case of calcareous deposits, which presented a bilateral symmetrical localization in the diaphragm

#### The Welfare of Mothers and Children

A recently published report gives a survey of the activities of the Opera nazionale per la maternità e la infanzia during the seven years of its existence (1926-1932). By means of fifty ambulant chairs of puericulture, 500 obstetric and pediatric consultants, and the supervision of several thousand institutes (more than 4,000 of which were aided directly), the society has aided more than one million mothers and three million

children. In 1932 alone, 70,956 abandoned and needy gravidæ, 174,317 abandoned and needy mothers with children under 3 years of age, and 352,606 children, among which there were 47,426 illegitimate children recognized by their mothers, were aided. In 1926, the total number of infant deaths in Italy exceeded 48,000. In 1932, after a slow but constant downward trend, the figure reached 37,000. In 1925, the total number of deaths of children up to 4 years of age was 217,000, in 1930 it dropped to 176,000 and has presumably diminished further during the past two years, although the statistics for this period have not yet been published. The total number of deaths, in 1925, of gravidæ, resulting from childbirth, was 3,111, while in 1930 the figure dropped to 2,900

#### Meeting of Laryngologic Society

The Società di laringologia held its twenty-eighth national congress at Rome, under the chairmanship of Professor Bilancioni, director of the University Clinic. The congress was attended by many foreign specialists. The chief topic, "Reflex Neuroses of Nasal Origin," was presented by Professors Carrari, Giussani and Palestini, who described the disturbances that are produced in remote organs, due to actions resulting from excitation of the nasal mucosa. Such reflex disturbances find in the trigeminal and in the neurovegetative system their distributive mechanism. The following topics were then discussed: "Adenoid Prophylaxis in Children," "The Organization of the Otorhinolaryngologic Service in Hospitals" and "University Instruction in Specialties." With reference to the last topic, it was admitted with regret that the number of chairs had been reduced in recent years. The next congress will be held at Bolzano

#### CAPE TOWN

(From Our Regular Correspondent)

March 31, 1933

#### The Annual Medical Congress

The Medical Association of South Africa will hold its annual scientific meeting, popularly known as the medical congress, at Cape Town in September. The president of the congress is Dr. E. B. Fuller, a consulting urologist and one of the pioneers in his specialty in South Africa. The sessions will be held in the recently completed buildings of the Cape Town University at Groot Schuur, which were planned by Mr. Solomon, an architect of distinction, who died recently. They are among the most beautiful in the country and are set in a picturesque environment. The program of the congress provides for three plenary sessions, which will be devoted to discussion on maternal mortality, diet in tropical climates, and medicolegal problems in general practice.

An attempt is being made to establish a special subsection at the congress for the discussion of comparative medicine. At Onderstepoort, the veterinary laboratory and research station near Pretoria, a well-trained staff has been working for many years on animal diseases. Sir Arnold Theiler initiated these investigations into avitaminosis, veterinary bacteriology and the pathology of malignant disease in animals, and excellent work has been done. De Koch, a pupil of Aschoff, has published original work on the results of splenectomy in sheep and horses. Jackson and de Kock have studied the curious pulmonary adenomatosis in sheep, while Green and others have written on the various deficiency diseases and stock poisons. The Onderstepoort institution now is studying the diseases of wild game in the Kruger reserve. The result of all these researches are almost unknown to the medical profession, although they may have an intimate bearing on human disease. It is suggested that there should be a definite collaboration between medical men and veterinarians for the purpose of discussing pathologic questions that are of mutual interest. The incidence of tuberculosis is one of these questions in which such cooperation may be of great help in this country.

### The Sale of Poisons

Recently both chemists and medical men have agitated for some modification of the law which now permits the sale of poisons by grocers and shopkeepers, provided such poisons are classed as domestic or agricultural necessities. In the medical, dental and pharmacy act, section 50 prescribes that scheduled poisons shall be sold only by chemists, but the succeeding section provides that poisonous substances for domestic and agricultural use may be sold in the shops of general dealers without the useful restrictions that are imposed on the chemists. The main difficulty in obtaining a modification of the act is the opposition of the chambers of commerce, which object to any restriction on the sale of articles that have been allowed to be vendd by bazaars and shops. Among these articles, proprietary medicines, generically known as 'Dutch household remedies' occupy an intrenched position. They are sold in great quantities, and while their therapeutic usefulness is almost nil, their alcoholic content is in some cases remarkably high. Such things as compound solution of cresol and sodium hydroxide are freely sold, and it is well known that both substances are frequent causes of poisoning. Chemists and physicians have now combined to urge that some restriction be placed on the free sale of such substances but it is unlikely that their representations will have much effect with a government that legislates mainly in the interest of the farming community.

### Disciplinary Cases

The South African Medical Council, at its session this month, had before it two interesting disciplinary cases. In one a senior practitioner was found guilty of signing a death certificate without having satisfied himself that the facts were fully and correctly stated. Laxity in certification is unfortunately common and the council has already issued warning notices about it. In this case it found the practitioner guilty of improper conduct and reprimanded him. In the second case another senior practitioner in country practice, was charged with having improperly made certain statements about a patient to the police and of having examined the patient without his consent. The case created a great deal of local interest, for the parties involved were fellow practitioners in a small country town. From the evidence, it appeared that the accused had acted in his official capacity as district surgeon. The council found as a result, that he was not guilty of improper and disgraceful conduct and that he had acted under statutory authority in examining the patient, and dismissed all the charges against him.

### The New Cape Town Hospital

After nearly six years of weary waiting the magnificent new hospital which is also to be the teaching hospital of the university is under construction. The site is on the northern mountain slope, on ground belonging to the Rhodes estate. It needed leveling and a considerable amount of money has been spent on this necessary preliminary. The superstructure is to be erected at a cost of £500,000. The hospital is to be a large block, with the departments arranged in the several stories and with ample outpatient provision. There is to be a fee paying ward and various special departments. The design of the hospital has been criticized in some quarters, but the architect, Mr. Cleland of the public works department, is an authority on hospital planning and his design has been planned in close collaboration with the medical and administrative staffs. As a matter of fact, the hospital when completed will be one of the best in Africa. Considering the difficulties that had to be overcome—not the least of which is the separation of white from Negro patients and the problem of ward orientation—Mr. Cleland's plan will be generally approved of by those who are capable of judging. Cape Town has long wanted a modern hospital. The institution that at present serves as such dates

back to the early sixties of the last century and is in all respects unsuitable. The new hospital will accommodate 400 patients and will be served by three adjacent district hospitals, of the cottage hospital type, which are comparatively modern buildings.

### NETHERLANDS

(From Our Regular Correspondent)

April 20, 1933

### Physical Therapy in the Netherlands

At the suggestion of J. van Breemen, director of the Institute of Physical Therapy in Amsterdam, an investigation was made into the status of physical therapy in the Netherlands. The inquiry covered the year 1929 and a part of 1930. According to van Breemen, the essential task of physical therapy is to study the application of physical stimulus to healthy and ill persons. Among the methods that may be employed are climato therapy, inhalation therapy, balneotherapy, thalassotherapy, hydrotherapy, thermotherapy, massage, gymnastics, mechanical orthopedics, electrotherapy and heliotherapy. The results of the inquiry are summed up in the following conclusions: 1. Physical therapy is employed in the Netherlands in all its forms, not only in a number of specialized institutions but also in the hospitals and in private practice. The organization of physical therapy is not yet complete. 2. Management, surveillance and medical control of physical therapy are lacking in some instances. 3. The diplomas and titles connected with the use of physical therapy should be regulated and protected by law. Likewise certain conditions should be met. 4. A special preparation of physicians will make possible a genuine medical surveillance of physical therapy.

### Restrictions on the Number of Medical Students

Prof. W. Storm van Leeuwen defends in the daily press the creation of restrictions on the enrolment of students in universities and particularly in the faculties of medicine. He sees no harm in special entrance examinations, but he would like to see established for each university the maximum number of students that may be enrolled in each faculty. That would constitute the first restriction. A second restriction may be established by subjecting medical students to special entrance tests. Those who succeed in passing such tests would be placed on a list in accordance with the total number of points secured. From those with the lower grades could be eliminated whatever number would be necessary to reduce the number of entrants to the basis required.

### Bacillary Dysentery in Amsterdam

In the *Nederlandsch Tydschrift voor Geneeskunde* Dr. Charlotte Ruys publishes the results of her laboratory research on an epidemic of bacillary dysentery that occurred recently in Amsterdam. She concludes that bacillary dysentery of the Sonne type is endemic in Amsterdam. In the winter of 1931-1932 there was also a slight outbreak of the Flexner type. After recovery, patients may eliminate for a long time dysentery bacilli in the feces. Contacts have doubtless great importance from the point of view of contagion.

### Social Hygiene in the Netherlands

Dr. Eykel, inspector general of public health, has published a book entitled 'The Work of Social Hygiene in the Netherlands' in which he writes first of the various organizations that control the public health services in the Netherlands. The remainder of the book is devoted to child hygiene and the crusades against tuberculosis and venereal diseases. Dr. Eykel does not consider in his book the social measures adopted against diphtheria, trachoma, blindness and nervous diseases. These activities have not the same importance as the crusade against tuberculosis and syphilis.

### Aid for Lepers

The Association for the Aid of Lepers, founded at Bandung, publishes a journal entitled *Pro Leprosos*. The purpose of the association is (1) to take an interest in the welfare of lepers, (2) to propagate ideas concerning the treatment of leprosy, and (3) to aid financially the application of curative methods. The editor of the journal is Dr. C. J. Wijckerheld Bisdom of Bandung, who is also the director of the association. Aid is given to lepers irrespective of race or religious faith.

### Commemoration of the Third Centenary of Leeuwenhoeck

Ceremonies were held recently at Delft commemorating the three hundredth anniversary of the birth of Anthony Leeuwenhoeck. Many notables of the Netherlands attended. Professor Gutterink, rector of the senate. Prof. D. Arcy Wentworth Thompson, delegate from the Royal Society. Prof. J. Van Der Hoeve, president of the Leeuwenhoeck national committee. Addresses were delivered and a wreath was laid on the grave of the scientist in the old church at Delft.

### BELGIUM

(From Our Regular Correspondent)

April 20 1933

#### Requirements for Specialists

After many long discussions, to which attention has been called in previous letters, the Royal Academy of Medicine of Belgium has concluded its preliminary studies and a bill has been introduced concerning the requirements to be met by specialists.

1. As supplementary to the medical studies properly so called and under the form of postgraduate instruction, tests are legally established covering a thorough preparation in the practice of internal medicine, general surgery and the various medical and surgical specialties.

2. Certification of specialists may be based on subjects compulsory instruction in which is provided for by article 14 of the law pertaining to higher instruction such for example, as internal medicine, general surgery, obstetrics and gynecology, pediatrics, ophthalmology, otorhinolaryngology, dermatology and syphilography, psychiatry, urology, legal medicine, bacteriology and radiology.

3. Instruction in the foregoing specialties is obtained in practice courses taken in a department of a university (or of a private hospital, on condition that such department be approved by one of the faculties of medicine of Belgium). Every candidate must, however, be enrolled in a Belgian faculty of medicine.

4. Such a course will comprise four consecutive years of residence and work in the fields of general surgery and internal medicine if full time is devoted to such study, or six years of part time work, at least two years of study for each of the medical or surgical specialties if full time, four years if part time.

5. Candidates who desire to practice in two specialties must take the courses prescribed for these two specialties. However, candidates who have fulfilled the requirements for general surgery may practice in gynecology and in urology, either separately or conjointly, provided they have passed the tests imposed for these two specialties.

6. A course may be taken partly at one institution of Belgium and partly in another and, with the consent of the faculty of medicine in which the candidate is enrolled, part of the course may be taken at a foreign institution.

7. Candidates in specialties of a medical or surgical nature are authorized to take part of their course in a general medical service or in a general surgical service, respectively.

8. The course pursued by a candidate is attested by a written statement signed by the department heads under whom the course was taken. This declaration must be officially recorded.

9. On completion of the course, the candidate must present himself before an examining board composed of five members, three of whom are particularly competent in the specialty concerned: the faculty professor, a professor of another faculty of medicine or the accepted department head, the head of the department in which the course was taken and two other professors of the faculty. The examining board is selected by the faculty of medicine.

10. The candidate must submit to the following tests: (a) thorough examination of a patient, (b) technical test, operation performed before the board, (c) presentation and oral discussion of manuscript or printed article or discussion of a topic previously announced by the board.

11. Two successive failures will eliminate a candidate definitively.

12. During a transition period covering the first six years following the promulgation of the present ruling, bearers of a legal diploma of doctor of medicine, surgery and obstetrics may, without taking the prescribed course, be admitted to the practical test for specialists after twelve years of experience in general surgery and internal medicine or after six years of experience in the other specialties.

13. To the candidate who has successfully passed the practical test under the aforementioned conditions there will be delivered an official certificate constituting the special diploma in the specialty or specialties concerned. This special diploma must be presented to the chairman of the medical commission of the district in which the graduate resides. The diploma is subject to legal confirmation.

Taking account of these various principles, the commission adopted the following regulations:

1. Public authorities shall prohibit the use of the title of specialist by any physician who has not passed the foregoing tests, subject to penalties similar to those imposed on persons who practice the art of healing without authorization.

2. In accordance with legal provisions to be adopted by the public authorities, positions as department heads in hospitals, institutes, polyclinics and dispensaries may be held only by bearers of a special diploma in the branches corresponding to the respective departments. Likewise, only holders of a special diploma may be approved by official organizations, societies or benevolent orders for the practice of internal medicine, general surgery, obstetrics and gynecology, pediatrics and the various specialties mentioned.

#### Automobile Accidents

The official statistics for Belgium show, in round numbers, 12,000 automobile accidents in 1927, 17,600 in 1929, 18,800 in 1930 and 18,700 in 1931. With relation to the number of cars in use and adopting 100 as the norm for 1927, the proportion of accidents in 1928 was 127, in 1929, 146, and in 1930 and 1931, 157. The number of persons involved increased one third between 1927 and 1931. For each 100 accidents in 1929 there were forty-eight persons injured, two of whom died; in 1930, forty-nine persons injured, with two fatalities; and, in 1931, forty-five injured, two of whom died. The preliminary report for 1932 shows an increase. In spite of these alarming facts, no legislation has as yet been enacted providing for the medical examination of drivers.

#### Prof. Albert Lemaire (1875-1933)

The unexpected death of Professor Lemaire, in the midst of full physical vigor and intellectual activity, caused consternation among the medical profession of Belgium. Albert Lemaire was widely known as a great teacher. As professor of clinical medicine at the University of Louvain he obtained recognition through his research on icterus and the anemias.

## Deaths

Albert R. Mitchell & Lincoln, Neb., for seventeen years continuing a member of the Board of Trustees of the American Medical Association and chairman of the Board since June, 1922, died at his home in Lincoln of pneumonia, May 29, aged 77 years. Dr. Mitchell was born in Cambridge, Ill., April 5, 1855. He received his M.D. degree from Rush Medical College in 1879. In that year he entered practice in Lincoln, Neb., a town of 3,000 in the midst of a prairie. Conditions were primitive—surgery done in the attics of homes, roads and telephones not yet available. In 1883 he was instrumental in the establishment of the medical school of the University of Nebraska at Lincoln, becoming dean of the college and professor of anatomy and clinical surgery. In 1887 the school was moved to Omaha.

Since 1879 Dr. Mitchell had practiced continuously at Lincoln. He served as president of his county and state medical societies and for many years as surgeon of St. Elizabeth's Hospital. In 1929 the profession of Lincoln honored him with a doctorate in the person of his first-year of practice. He was surgeon general of the Nebraska National Guard during the Spanish American War and served on the Nebraska Medical Advisory Board during the World War. He was consulting surgeon to several railroads and medical director of the Bankers Life Insurance Company. Dr. Mitchell also served as president of the American Association of Railway Surgeons.

In 1908 and again from 1910 to 1916 Dr. Mitchell was an active member of the House of Delegates of the American Medical Association, representing Nebraska. In 1916 he was elected a member of the Board of Trustees and was reelected in 1919, 1922, 1925 and 1928.

The work of Dr. A. R. Mitchell for the American Medical Association was marked by an intense quality. He gave of himself to the fullest, particularly during recent years, when he came regularly to meetings of the executive committee. During the regular sessions of the Board he was active in discussion, invariably demanding exacting medical leadership in medical affairs. He represented the best type of physician of the old school, keeping abreast of medical progress and moving fast to the traditions of the profession.

Emil Sebastian Geist & Minneapolis, University of Minnesota College of Medicine and Surgery, 1910, studied in Paris, Breslau and Vienna, 1911-1914, secretary of the Section on Orthopedic Surgery, 1913-1917 and chairman, 1918-1919, American Medical Association, associate professor of orthopedic surgery at his alma mater and the University of Minnesota Graduate School of Medicine, member of the American Orthopedic Association and the Clinical Orthopedic Society, fellow of the American College of Surgeons, major in the medical reserve corps of the U. S. Army, 1915-1918, member of the staffs of the Northwestern, St. Mary's, Sweden and Asbury hospitals, orthopedist to the Gillette State Hospital for Crippled Children, St. Paul, aged 55; died, May 14, of heart disease.

William Gray Schaeffer & Princeton, N. J., College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1889, past president of the Medical Society of New Jersey, member of the American Climatological and Climatological Association, professor of physiology and diseases of women, medical department, American University of Beirut, Syria, 1891-1895, served during the World War, medical adviser to the Princeton Theological Seminary

member and past president of the state board of education, aged 69, died, April 30, of cerebral hemorrhage.

Henry Kurtz Baumgardner Hufford & Major M. C., U. S. Army, San Francisco University of Pennsylvania School of Medicine, Philadelphia, 1916, served during the World War entered the medical corps of the U. S. Army as a first lieutenant in 1917 and in 1918 was promoted to major, fellow of the American College of Surgeons, aged 42, chief of the orthopedic service, Letterman General Hospital, where he died, May 5, of heart disease.

Martin Dewey, New York, Rush Medical College, College of Physicians and Surgeons, 1904, also a dentist, an Associate Fellow of the American Medical Association, past president of the American Dental Association, editor of *A Review of Orthodontia* and formerly editor of the *International Journal of Orthodontia*, aged 52, died suddenly, May 14, of angina pectoris.

Albert Edward Brownrigg, Sheridan, Wyo., Baltimore Medical College, 1897, Harvard University Medical School,

Boston, 1898, member of the American Psychiatric Association and the New England Society of Psychiatry, served during the World War on the staff of the Veterans Administration Hospital, aged 60, died, May 3, in St. Joseph's Hospital, Nashua, N. H., of carcinoma of the lungs.

Edward Chaloupka, Omaha, John A. Creighton Medical College, Omaha, 1905, associate in gynecology, 1913-1916, instructor, 1916-1917, professor, 1923-1924, and since 1924 professor of gynecology and obstetrics at his alma mater attending gynecologist and obstetrician to the Creighton Memorial and St. Joseph's hospitals, aged 53, died, May 2, of chronic myocarditis.

Royal Charles Rodecker, Mercer Wis. Bennett College of Eclectic Medicine and Surgery, Chicago, 1898, member of the State Medical Society of Wisconsin, past president of the Wisconsin State Board of Medical Examiners; served during the World War, aged 57, was found dead in his garage, April 29, of heart disease.

Henry Exum Austin & Coatesville, Pa., Jefferson Medical College of Philadelphia, 1912, member of the American Psychiatric Association and the New England Society of Psychiatry, served during the

World War on the staff of the Veterans Administration Hospital, aged 45, died, May 9, of heart disease.

Charles Norris Cowden, Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1885, member of the Southern Surgical Association, fellow of the American College of Surgeons on the staffs of St. Thomas Hospital and the Nashville General Hospital, aged 68, died, April 29.

John Gordon McCrummon, Detroit, Ohio State University College of Medicine, Columbus 1928, formerly instructor in bacteriology at his alma mater on the staff of the Henry Ford Hospital, aged 33, died, April 29, in Boston, of injuries received when struck by an automobile.

Marion Eaton Spurgeon & Red Bird, Mo.; Beaumont Hospital Medical College, St. Louis 1901, president of the Gasconade-Maries-Osage Counties Medical Society, aged 54, died, May 7, in the Barnes Hospital, St. Louis, following an operation on the gallbladder.

Charles Elmer Brown, Rossville, Ill., Bennett College of Eclectic Medicine and Surgery, Chicago 1895, Northwestern University Medical School, Chicago, 1903, aged 64, died, May 1, in the Lake View Hospital, Danville, of septicemia and prostate abscess.



ALBERT R. MITCHELL, M.D., 1856-1933

James Edward Crichton, Seattle, University of Buffalo School of Medicine, 1883, member of the Washington State Medical Association, for sixteen years member of the city council, formerly health officer of Seattle, aged 70, died, March 20

Anson A Smith, Muskegon, Mich., Victoria University Medical Department, Coburg, Ont., Canada, 1889 member of the Michigan State Medical Society, formerly health officer of Muskegon, on the staff of the Hackley Hospital, where he died, March 31

William Clarence Upham, Washington, D C. Howard University College of Medicine Washington, 1888 member of the Medical Society of the District of Columbia aged 78 died, April 27, in the Garfield Hospital, of arteriosclerotic heart disease.

Joseph Bascumb Kirk, Bluefield, W Va., College of Physicians and Surgeons, Baltimore 1886, member of the West Virginia State Medical Association, served during the World War, aged 69, died April 19, of heart disease

Ambrose McChesney Brown, Dwight, Ill., University of Pennsylvania School of Medicine, Philadelphia, 1920, on the staff of the Veterans' Administration Hospital, aged 38, died, April 7, of an overdose of a sleeping potion

Hjalmer Melanchton Berge, Everett, Wash University of Minnesota Medical School Minneapolis, 1921, formerly county health officer, aged 37, died April 10, in the Laurel Beach Sanatorium, Seattle of tuberculosis

Ella Merry Hastly, Minneapolis, College of Physicians and Surgeons, Medical Department of the University of Southern California, Los Angeles, 1912, aged 49, died, April 17, of carcinoma of the breast with metastasis

Ralph Leavitt Macfarland, Jamaica, N Y New York Homeopathic Medical College, 1885, member of the American Radium Society, aged 69 died, May 5, of cerebral hemorrhage, diabetes mellitus and arteriosclerosis

Wesley Reid Putney, Lake City, Fla., University College of Medicine, Richmond Va., 1912, served during the World War, aged 45, died, May 2, in the Veterans' Administration Hospital, of cerebral hemorrhage.

Robert Lee Ramey, El Paso, Texas University of Maryland School of Medicine Baltimore, 1892, fellow of the American College of Surgeons, attending surgeon to Hotel Dieu, aged 63, died, March 31

James Alexander Campbell, St. Louis, Homeopathic Medical College of Missouri, St. Louis 1869, fellow of the American College of Surgeons, aged 86, died suddenly, April 18, of chronic myocarditis

John Morgan Crane, Addison, N Y, Eclectic Medical College of the City of New York, 1901 aged 58 died, April 11, of acute dilatation of the heart and injuries received in an automobile accident

Ivan Lester Biggs, Fostoria, Ohio, Starling-Ohio Medical College, Columbus 1910 served during the World War, aged 45, died, April 29 in the University Hospital, Columbus, following a splenectomy

William James, Dover N J, University of Pennsylvania School of Medicine Philadelphia, 1906 served during the World War, aged 51, died April 20, of injuries received in an automobile accident

Samuel J Blackman, Harrisburg, Ill., Marion-Sims College of Medicine, St. Louis, 1896 member of the Illinois State Medical Society, aged 69 died, April 28 in the Lightner Hospital, of asthma

Arnold A Perry, Overland, Mo., Barnes Medical College, St. Louis, 1900 formerly coroner of St Charles County aged 61 died, March 4, of septicemia, following tooth extraction ten days previously

Israel James Clarke, Haverhill, Mass., University of the City of New York Medical Department, 1884, aged 72, died, May 4, in the Gale Hospital, of arteriosclerosis and arteriothrombosis

Alfred Herbert Vogt, Albuquerque, N M., University of Buffalo School of Medicine, 1916, member of the New Mexico Medical Society, aged 41, was found dead in bed, April 1, of heart disease.

Peter Aloysius Slattery, Cedar Rapids, Iowa, John A. Creighton Medical College, Omaha, 1908, member of the Iowa State Medical Society, aged 57, died, April 16, of cerebral hemorrhage.

Robert Percy Crookshank, Brandon, Manito, Canada, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1878, aged 81, died, February 2.

Thomas W Cross, Birmingham Ala University of Nashville (Tenn.) Medical Department, 1877, aged 85, died, May 3 in the Norwood Hospital, as the result of an injury received in a fall

George B Twitchell, Cincinnati, Miami Medical College, Cincinnati, 1891, aged 68 died, April 27, in the Jewish Hospital, of carcinoma of the base of the tongue and myocarditis

William Charles Pontius, Warren, Ohio, Temple University School of Medicine, Philadelphia, 1917, served during the World War aged 46, died, May 3, of bronchopneumonia.

Louis Textor Boyer, Steubenville, Ohio, University of Pittsburgh School of Medicine, 1923 aged 34, died April 30, in the Mercy Hospital, Pittsburgh, of agranulocytic angina

Frederick Olin Pease, Chicago Chicago Homeopathic Medical College, 1886, aged 80, died, April 17, at his brother's farm near Pipestone Minn., of cerebral hemorrhage

John Louis Marchand, Bluefield Nicaragua, Central America University of Pennsylvania School of Medicine, Philadelphia 1894, aged 64 died, April 6

Edmund Abbott, West Kingston R. I., University of the City of New York Medical Department, 1879 aged 76, died, April 12, of carcinoma of the bladder

James J. Troutt, Nashville, Ill University of the City of New York Medical Department 1872, aged 88, died, April 24, of carcinoma of the right testicle

Frederick John Schnell, North Tonawanda, N Y, Baltimore Medical College 1905, aged 56, died suddenly, May 5, of coronary heart disease.

Joseph Cinq-Mars, St. Sacre Coeur de Marie, Que., Canada Laval University Faculty of Medicine, Quebec, 1885, aged 70, died February 27

Lucius A Wright, Los Angeles, Physio-Medical Institute, Cincinnati 1876, aged 81 died, April 8 of coronary thrombosis and cerebral embolus

Thomas Crandel, Warren, Ind Eclectic Medical Institute, Cincinnati, 1869, Civil War veteran, aged 95, died, May 6 of lobar pneumonia

Granville Corwin McCreight, Willard, Ohio Miami Medical College, Cincinnati, 1901, aged 60, died April 22, of arteriosclerosis

David Nathan Bloom, Boston Baltimore University School of Medicine 1904, aged 62, died, May 3, of cardiovascular disease.

Samuel B Koser, Sebring Fla Baltimore Medical College, 1891, aged 67, died, April 9, of chronic myocarditis and arteriosclerosis

William R Pennington, St Joseph, Mo College of Physicians and Surgeons, Chicago, 1898 aged 76, died, January 17

Everett Riley Beard, Liberty Ind., Medical College of Ohio, Cincinnati, 1897, aged 62, died, April 28, of coronary thrombosis

Eugene William Pape, San Francisco University of Nebraska College of Medicine, Omaha, 1926, aged 30, died, January 9

Worth A Thompson, Rutherfordton, N C., College of Physicians and Surgeons, Baltimore, 1885 aged 70, died, February 28.

Leonard A Bratholdt Minneapolis Rush Medical College Chicago, 1905 aged 55, died, April 16, of heart disease

Thomas G Ashton, Wynnewood, Pa., Jefferson Medical College of Philadelphia, 1888, aged 65, died, February 23

Thomas Leroy Hickman, Findlay, Ohio (licensed, Indiana, 1897), aged 78, died, March 7, of heart disease.

## Marriages

REGINALD MICHAEL NORRIS, Jacksonville, Ill., to Miss Mary Schultz of Beardstown, April 24

VAN BUREN MAURICAU Morton, Ill., to Miss Frances Kraemer of Joliet, April 22

CHESTER C DOHERTY, Chicago, to Miss Bernadine Flynn of Madison, Wis., April 29

R. FRANCIS ETIENNE to Miss Jane Elizabeth Lynch, both of Akron, Ohio, April 25

RAYMOND S SIMENSON, Chicago, to Miss Violet Starks of Madison, Wis., April 22

## Bureau of Investigation

### THE W O BYE CANCER CURE

Still Operating from Kansas City, Mo

William O Bye of Kansas City, Mo, has long been in the advertising "cancer cure business." He was born in 1870 and holds a diploma issued in 1897 from Bennett College of Eclectic Medicine and Surgery. Associated with him for the past few years has been one Arthur Heinzelmann, who holds a diploma issued in 1907 from the Eclectic Medical University of Kansas City, a low-grade school that went out of existence some years ago. In 1912 Heinzelmann's name appeared as superintendent of a "cancer cure" concern, the Cliff View Sanatorium of Kansas City, Mo, which advertised the escharotic treatment of cancer.

William O Bye for many years operated his "cancer cure" through the mails, but the postal authorities in 1910 declared this business a fraud and debarred it from the United States mails. William O Bye is a brother of Benjamin F Bye, both sons of another old offender D M Bye, all of whom together with Leon T Leach, son-in-law of D M, used to operate mail-

#### Book on Cancer Free

When hundreds of perfectly reliable people gladly testify that they have been rescued from death's door by Dr Bye's Combination Oil Treatment for Cancer and similar dreadful diseases, it is surely worth while to investigate the methods and results of this treatment. Any one may obtain free of charge a finely illustrated book describing this simple and efficacious treatment, simply by writing Dr W O Bye Ninth and Broadway, Kansas City, Mo

**CANCER** its successful treatment without use of the knife. Hundreds of satisfied patients testify to this mild method. Write for free book. Tells how to care for patients suffering from cancer. Address Dr W. O. Bye, Kansas City Mo

Above, one of W O Bye's older advertisements. Below a 1933 advertisement.

order "cancer cures." All four of these gentry claimed to have alleged "oil treatments" for the cure of cancer. When the postal authorities got around to W O Bye and the federal chemists analyzed the no-trumps comprising his treatment, it was reported to consist of five different preparations: (1) A mixture of cottonseed oil and almond oil; (2) a product resembling syrup of sarsaparilla; (3) sugar pills; (4) vaseline; and (5) a clay poultice.

W O Bye in his old mail-order advertising claimed that he had "an infallible cure for all forms of cancer" and that he had effected cures in some of the worst cases of internal cancer. In 1907 W O Bye's license to practice medicine in Missouri was revoked by the Board of Health of that state, but Bye appealed to the courts submitting depositions from those he claimed to have cured of cancer. The court ordered the Board to restore his license. The postal authorities later showed that the depositions that Bye had presented were, in most instances from individuals whose alleged cases of cancer had never been diagnosed as cancer at all.

Following the issuance of the fraud order against W O Bye, he, in common with other mail-order "cancer cure" concerns, modified his method of doing business by requiring his patients either to come for a personal examination and diagnosis or to have a local physician fill out a card that Bye would furnish stating that the patient had cancer. An Indianapolis physician

reported in 1932 the case of a patient of his who was dying of cancer of the cervix and having seen one of W O Bye's advertisements, wrote to Bye. Bye replied to the poor woman as follows:

"I have your letter and in reply will say before furnishing you treatment, I would first like to make an examination of your case, if possible, in order to get a good understanding of it and to prepare treatment accordingly. If desired I will agree to come there, to your home examine you and furnish a month's treatment for \$100.00 and the expenses of the trip money to be paid while there. Expenses means railroad fare both ways, sleeper meals etc. en route. This price includes the first month's treatment price, thereafter should more be needed to be \$30.00 per month for treatment. After examination I can give all information desired. I will bring the medicine along prepared and leave one month's supply at no extra charge, with full directions, so you can use it yourself."

Bye has for years sent out an advertising booklet entitled 'A Message of Hope.' In this he leads the recipient to believe that operations and the use of x-ray and radium in the treatment of cancer should be avoided. The booklet contains testimonials from persons who are alleged to have been cured of cancer by W O Bye. The edition issued in 1933 is less than half the size of that issued ten years previously—forty-eight pages as compared with one hundred and one pages. The 1922 edition of 'A Message of Hope'—which, by the way was from the 'Press of the Western Baptist Publishing Co., Kansas City, Mo'—reproduced among other testimonials what purported to be "before and after" pictures of three women who were said to have been cured of cancers of the face. To any one familiar with photographic processes it was obvious that in each case the pictures used to show the patient "after" the growth had been removed were made from the same negatives as the "before" pictures, the engraver or photographer having skillfully removed the growth with a retouching pencil!

While the present day newspaper advertising deals only with Bye's cancer "cure," it appears from 'A Message of Hope,' pamphlets now being sent out that he is willing to turn his talents to the treatment of Gastric Ulcer and 'Skin Diseases.' He used to extend his specialties to include, also, Chronic Nasal Catarrh, Rectal Diseases, "Female Diseases" and Uterine Displacement.

W O Bye still advertises. The recent advertisement reproduced with this article appeared in the January, 1933, issue of one of those cheap publications that seem to depend for their existence on the revenue from advertising so rotten that it would be rejected by magazines and newspapers that had ethical standards.

In Bye's Message of Hope sent out in March, 1933, he makes this statement about the character of his treatment:

Our treatment is both local and constitutional in all cases and is prepared especially for each individual. The local remedies are applied directly to the affected parts in the form of oils (italics ours—Ed), ointments, powders, pastes, liquids and injections.

From this it would seem that the "oil treatment" still persists.

## Correspondence

### "THEELIN"

To the Editor—The report of the Council on Pharmacy and Chemistry on 'Theelin' (THE JOURNAL, April, 29) fails to stress one serious danger arising from the careless administration of this substance.

Many, it not most, of the disturbances of the female sexual cycle are psychogenic in origin and all such disturbances must have psychic implications. Dysmenorrhea is extremely common in neurotic women, especially in those who have taken refuge from unconscious sexual conflicts by establishing psychic frigidity.

Any medicament which tends to increase the somatic sexual urge in such women (and several observers agree that an increase of libido is an effect from 'Theelin') must obviously intensify the conflict which is already almost unbearable. When a woman is already struggling against unadmitted autonomic

cravings and, by dint of psychic frigidity and various functional disturbances has succeeded in establishing an uneasy and partial adjustment, the exhibition of an agent that increases such autonomic cravings must make things worse—and often does, quite obviously. Serious panics, even major psychoses and suicidal attempts not infrequently follow the injudicious use of 'Theelin' in such cases.

I have myself observed a number of such untoward reactions and so have many others—though they may not have understood or admitted the causation.

Let me repeat 'Theelin,' and all other female sex hormone preparations and other therapeutic agents which do or may, increase somatic sexual desire, must be used only with great caution if at all in neurotic women. To increase autonomic cravings which are already the cause of intrapsychic conflict, and which have been rejected as inadmissible by the ego, is dangerous, and may (and often does) break down the patient's resistances and thus precipitate psychosexual panic, frank insanity or suicide.

Until the patient's psychic resistance to the libido is overcome by suitable psychotherapeutic means any increase in somatic libido is contraindicated.

ERNEST M. POATE, M.D., Southern Pines, N. C.  
Associate Professor of Psychiatry, Duke  
University School of Medicine.

### THE FETISH OF TRIPLY DISTILLED WATER

*To the Editor*—In answer to the communication by Elser and Stillman we wish to submit the following data, which have been stressed in our recent article on the 'Prevention of Chills Following Transfusion of Citrated Blood.' Our paper refers mainly to the various factors which were found from experience to be of extreme importance in the prevention of chills following transfusions. In our hands single distilled and doubly distilled water were found to be ineffective in the prevention of chills for citrate transfusions. The best results were obtained only with triply distilled water.

We have also stressed the importance of the preparation of the instruments in the central supply room, the slow infusion, and the mutual tests prior to transfusions.

The problem concerning the use of intravenous saline solution and dextrose is somewhat different. The number of chills following the administration of such substances is considerably less than the number of those following citrate transfusions irrespective of the nature of the distilled water. With respect to these fluids however, our results have also been considerably better, since we have been using triply distilled water.

RICHARD LEWISOHN, M.D.  
NATHAN ROSENTHAL, M.D.  
New York.

### USE OF COBRA POISON THERAPEUTICALLY

*To the Editor*—In glancing through the April 29 issue of THE JOURNAL, under the section devoted to foreign letters, I noted a paragraph relating to the treatment of cancer with cobra poison. In this paragraph it is indicated that Mr. Korossios and Mr. Laignel-Lavastene had made the original research in this direction. May I suggest that as far as I am aware, it was a New York physician who originally studied the effect of snake poisons in treating certain diseases, including cancer, his work being steadily conducted for the past six years. At his request I extracted and tendered cobra (Naja) and Crotalus venoms to him during this period, and assisted him in his laboratory with the preparation of the modified

cobra poison for injection. Until about a year ago, he steadily supplied Dr. Gosset and Dr. Taguet of Paris with the modified cobra poison with which they conducted their experiments at the Salpetriere Hospital in France. Recently Professor Calmette prepared some of the solution from the formula given to him by the New York physician. I also assisted in necropsies on the animals which this physician used in his laboratory in connection with his experiments with cobra venom injections.

In 1929, I received an invitation and attended a meeting of the staff of St. Elizabeth's Hospital in New York where the results of several years of this work were reviewed.

Several physicians in this country and in Canada have also used the modified cobra venom prepared by the New York physician.

RAYMOND L. DITMARS, LITT.D., New York.  
Curator, Department of Mammals and  
Reptiles, New York Zoological Park.

### GLIOMA OF THE RETINA

*To the Editor*—The newspaper notoriety given to the Vasco case—the child whose parents refused operation for a tumor of the retina—brings up several questions. If surgery fails, the irregulars and the general public perhaps will say that here scientific medicine stepped in at the behest of the law and yet the life of the child was not saved.

Glioma of the retina is a terrible disease and demands primarily brain and not eye surgery. When it kills, it does so practically always by direct extension of the tumor backward through the optic nerve to the brain. The surgical problem, then, is always to remove all the nerve possible.

The optic nerve is 5 cm. long, of which 3 cm. is in the orbit, 1 cm. in the bony optic canal and 1 cm. intracranial (Norris and Oliver, vol 1, p 386). The usual procedure among eye surgeons (of whom I happen to be one) is to enucleate the eye and, if the cut end of the nerve shows disease or if a local recurrence occurs later the orbital cavity is cleaned out down to bone. This exenteration of the orbit gets all the tissues and of course, all the nerve within the orbit. However it leaves 2 cm. of the nerve between the orbit and the chiasm.

Two British investigators (N. M. Dott and Spence Meighan) reported before the Ophthalmological Society of the United Kingdom at Edinburgh in May, 1932 that they had resected successfully the optic nerve intracranially up to the chiasm for glioma of the retina in a child in whom, after enucleation, infiltration of the tumor was found at the point of section of the optic nerve. They were led to do this because in about half of all cases of enucleation for glioma of the retina, the section through the nerve of an enucleation is not in sound tissue as shown by A. B. Reese. This British report seems to be the first intracranial removal of the optic nerve in glioma on record.

Two eminent brain surgeons in personal communications (I do not feel at liberty to call their names) assure me that the mortality in performing an intracranial operation for the removal of that portion of the optic nerve from the chiasm on forward through the canal in the hands of properly qualified surgeons should be very small. One states 'two per cent or thereabouts' and the other surgeon strongly insists that the risk of an intracranial operation is increased tremendously if the eye has been removed previously because of 'the possibility of coming in contact with the infected stump in the back of the orbit.' He also states that, if the eyeball has not been removed the danger remains slight. What a warning to eye surgeons to keep out!

In 1922, in a discussion of glioma retinae I said 'It seems advisable that brain surgeons should attack these cases from within the brain, which they can do with reasonable safety' (*Arch. Ophth.* 51:505 [Sept.] 1922). In 1925, in London at

the Ophthalmological Congress, in discussing a case of glioma of the retina with extension of the tumor backward beyond the optic foramen (roentgenograms of the optic canal in this case showed enlargement and therefore most certainly extension into the canal), I suggested that 'the operation for its removal often came within the province of the brain surgeon and not the ophthalmic surgeon' To show the fear ophthalmologists have of brain surgery, both the reader of this paper in London and the president of the society said that they would not even think of brain surgery in these cases (*Tr Ophth Soc U A*, 45, 1925)

Let the ophthalmologist diagnose the glioma Let him assure himself that the second eye is not involved, since that raises other problems (would the law have ordered the removal of both eyes in the Vasco child?) Let him order a roentgenogram of the optic foramina Then let the ophthalmologist turn the case over to the brain surgeon for operation and not destroy the child's chance of life by trying enucleations, orbital exenterations, radium and what not

GEORGE W. JEAN, M.D., Santa Barbara, Calif

### THE LIFE CYCLE OF THE TUBERCLE BACILLUS

To the Editor—In THE JOURNAL, April 29, page 1342, is a brief review of our studies on the tubercle bacillus (Mellon, R. R., Richardson, R. D., and Fisher, L. W. *Proc Soc Exper Biol & Med* 30 80 [Oct.] 1932 Lindegren, C. C., and Mellon, R. R., *ibid* 30 110 [Oct.] 1932 Mellon, R. R., Richardson, R. D., and Fisher, L. W. *J Bact* 24 45 [Jan.] 1933) I feel sure that the reviewer did not intend to leave the impression that we had postulated the existence of morphologically distinct male and female sex cells But since this impression has been conveyed to me from others permit me to interpret these studies as follows The sexual mechanism suggested (not proved) is that of an autogamous fusion (Lindegren, C. C., and Mellon, R. R. *J Bact* 25 47 [Jan.] 1933), one of the lowest orders of sexuality, in contrast to a true bisexuality, which is the highest order Biologically the implications of the two types differ so much that I should not wish the critical reader to gain a wrong impression.

Moreover, even this suggestion has the status of a theory rather than a fact Its latest support is our demonstration of special nuclear structures strikingly similar to that existing in the sex cells of the fungi and by cytologic technic regarded as definitive for nuclear material Standing alone it is indeed surprising that certain stages in the life history of a bacterium should have such structures, particularly when a nucleus as such has never been accepted for the bacterial cell Yet we feel that such evidence is inadequate on which to base conclusive claims for sexuality We do view it as an advance in this direction carrying us farther to that goal—if, indeed, one exists

But I also wish to make clear that the sum total of our recent evidence for a life cycle of the tubercle bacillus depends in no way on the validity of the conception just discussed, unless of course one would limit life cycles to those of sexual nature. Briefly, this evidence is, first, that the well known filtrable granules (of Much?) give rise to non-acid-fast diplococci, diphtheroids, and so on secondly, that these distinct species—so called—may revert to the nonvirulent, or R, form of the tubercle bacillus, and, thirdly, that the latter can be forced back to the S, or virulent, form from which the granules of Much are obtained

This is tantamount to saying that all the principal variants (or mutants?) that have been described for the tubercle organisms since Koch's time are seen to be stages in a cycle, in the

sense that ultimately they are capable of reversion to the original tubercle bacillus Moreover, the experimental animal with its hazards for variability work is not an essential part of the evidence.

RALPH R. MELLON, M.D., Pittsburgh.

Director, Institute of Pathology, Western  
Pennsylvania Hospital

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request.

#### PROBABLE DIAGNOSIS OF THROMBOCYTOPENIC PURPURA

To the Editor—A white girl, aged 11 first noticed a fine macular eruption about the ankles March 27 1933 this eruption gradually spread over the entire lower extremities There was no itching pain or systemic disturbances The spots came out quickly and consisted of pinhead to pea sized round oval and irregular claret red spots which did not fade on pressure At present the eruption is brownish and disappearing About April 4 she noticed a tenderness and weakness in both calves, and two or three days later the right biceps became swollen tender red and hard About the time of muscular symptoms she began complaining of sudden attacks of cramplike pain about the umbilicus. There was vomiting for two or three days following meals from half an hour to two hours. At present there is a swelling of her forehead and occipital region with some pain and tenderness There is no history of easy bruising or prolonged bleeding and there is no blood in the urine feces or vomitus Birth and infancy were normal She had a severe illness at 4 years of age which a doctor called dropsy Enormous swelling of the extremities and the abdomen at this time lasted only one week She has had measles and whooping cough At present there is nocturia of from one to two times One crude urinalysis was negative. Blood count was not done. She has one brother and six sisters living and well Both parents are in good health. Her temperature, April 10 was 98.8 at 11 a. m. the pulse was 76 and the blood pressure was 95 systolic, 64 diastolic The eyes ears nose and mouth appear to be not diseased No abnormality was identified in the lungs or heart. No enlargement of the liver or spleen was made out There was no tenderness in the abdomen The reflexes seemed normal Please suggest diagnosis and treatment. I realize that there may be much lacking in this case report but one doing contract practice in a coal mining camp is used to much lacking

M.D. Kentucky

ANSWER—All the symptoms described may be explained as caused by hemorrhages The statement that there was no blood in the urine, feces or vomitus must be accepted as meaning that no blood was noticed The case is one of mild purpura A blood examination, including a differential count of the white cells and a platelet count, is the first requisite, to decide whether this is a thrombocytopenic case or belongs among the nonthrombocytopenic forms If the platelets are low, 100,000 or less, it belongs in the first category, either as morbus maculosus of Werlhof or one of the many forms of symptomatic purpura

In the case under discussion, Werlhof's disease seems to be ruled out by the mildness of the symptoms and the absence of splenic enlargement. The clinical examination has also eliminated Hodgkin's disease, tumors, sepsis, endocarditis, icterus and other infectious processes that might be responsible for the purpura. The blood count will rule out the severe anemias and leukemia. There remain the effects of heavy treatment with roentgen rays or radium, avitaminosis and anaphylaxis

If the platelet count, coagulation time and bleeding time are about normal, the case belongs in the second category Schoenlein's disease, purpura rheumatica, can be ruled out because of the afebrile, nonarthritic course. The visceral symptoms described suggest that this may be a mild case of Henoch's purpura, which occurs often in children, may clear up in a short time and never recur, or may recur from time to time, like erythema multiforme, with which it is often associated. The case should be studied further, the temperature recorded several times a day, the heart examined repeatedly, and a careful urinalysis made at intervals If visceral symptoms recur, the excretions should be saved for inspection by the physician and, if necessary, for laboratory examination

Whatever form of purpura may be decided on, the patient should be kept in bed If recovery does not progress smoothly, calcium may be given, either by mouth, 1 or 2 Gm with an equal amount of lactose dissolved in a half glass of hot water after each meal or calcium gluconate intramuscularly In

cases not due to arsenicals, arsenic pushed to the physiologic limit is beneficial, particularly in children. Ultraviolet ray baths, roentgen therapy applied to the spleen, and intramuscular injections of whole blood or blood serum from a healthy individual are recommended.

After recovery, the child should be watched and studied for indications of infection or of allergy.

#### INFECTIOUS ECZEMATOID DERMATITIS

*To the Editor*—A woman aged 30 unmarried has been ill for four months. She does office work. She has had severe prolonged attacks of articular rheumatism and a considerable amount of fluid has been taken from the knee joints. She had a large ovarian cyst removed when she was in her teens. Tonsillectomy seemed to help the rheumatism. For several years she has had a dark patch on her left shin just above the ankle, about 6 inches long. Six months ago the same kind of spot appeared on the right leg. This gave her no trouble but the appearance was not to her liking so she consulted a competent x-ray man who, last October gave her three or four roentgen treatments followed by a quartz ray exposure. Two weeks later the skin of both legs became red enormously swollen and commenced to weep and this condition has persisted to date, becoming better and worse. The itching and burning are almost unbearable and nothing applied locally or given internally has the least effect. Shortly after the legs became swollen there appeared over the entire body including the scalp an erythematous eruption (never any fever) accompanied by terrible itching and burning with itching and burning in the rectum and vagina. At this time the eruption over the body has improved greatly and the swelling in the legs is better but the skin of both legs continues to weep. There was weeping only on the legs. Her saliva was acid for a few days. To make matters worse, four days ago several of her joints became swollen as they used to formerly. The only x-ray burns I have ever seen were in Cook County Hospital in victims of State Street quacks. There were deep sloughs. This case is different. I know the x-ray man who treated this girl and he is competent. He treats many patients and has never had a burn. Any suggestions will be appreciated.

JOHN J. MCINTOSH M.D. Mount Carmel Ill

**ANSWER**—The description is not that of radiodermatitis. Presumably the original patch on the leg was eczema of unknown etiology. Either spontaneously or as a result of therapeutic hyperemia the eczema became exudative. The patient then became sensitized or allergic to the exudate. The eczema would now be of the type known as infectious eczematoid dermatitis. The patient should have soothing lotions for the body eruption. Tub baths should be avoided for a while. The legs should be kept elevated and constant well applied wet dressings should be applied to the exudative eruption. The wet dressings may consist of Burrow's solution diluted fifteen or twenty times with distilled water or diluted with boric acid solution. Sometimes a continuous wet dressing of 0.25 per cent silver nitrate is effective. After a week or ten days of such treatment, the following emulsion may be painted on freely and frequently: zinc oxide, 30 Gm., magnesium carbonate 30 Gm., bismuth subnitrate 30 Gm. lime liniment U S P, sufficient to make 236 cc. Cleansing should be done with either olive oil or liquid petrolatum.

#### AN EXPLANATION OF SENSITIVENESS FOR THE PUBLIC

*To the Editor*—The enclosed pamphlet by George Martyn M.D. entitled *Facts and Theories Explanatory of Sensitiveness and Its Role in Disease* written for my patients and friends is submitted for your comments. Do you regard its teachings as sound? Do you approve of this method of instructing patients actual and prospective? Please omit name.

M.D. Chicago

**ANSWER**—Scientifically, this booklet has a good side and yet it is also open to serious criticism. The author evidently tries to correlate theory and practice so that something useful will emerge. His description of the symptoms of migraine, hay fever and asthma are fairly good; however, he states that hay fever attacks are frequent mostly through the spring or autumn when certain groups of pollens are plentiful in flowers, dust or grass. A more accurate statement would be that hay fever occurs in spring from the pollen of trees, in summer from grass pollen and in fall from the pollen of weeds. Flowers and dust per se are not important.

The description of 'intestinal colic' is most indefinite. Beyond including it as sensitization disease there is no further light thrown on the etiology. Intestinal colic is not a good title as it suggests any sort of gastro-intestinal upset associated with spasms of pain and therefore includes both allergic and nonallergic groups.

The allergic group should be clearly labeled by some such title as 'gastro-intestinal allergy' or 'food allergy' to denote that certain foods are responsible for the symptoms.

The author boldly states that arthritis and gout are due to sensitization. There is no evidence that gout belongs to the group of allergic diseases. One form of arthritis (intermittent hydrarthrosis) is probably allergic. All the other varieties of arthritis do not belong in the group in the restricted sense of the word. Arthritis is not a sensitization disease as are hay fever, bronchial asthma, hypertrophic rhinitis, food allergy and certain skin conditions. It may be a sensitization from another point of view depending on the bacteria that cause the disease. It should therefore not be included, in the present state of knowledge, under allergic diseases.

The author's theories regarding histamine are well taken, but he states them as though they were already proved. For example, he says that 'Sir Thomas Lewis's work on the reactions of the skin proves that the release of histamine and the secondary reactions therefrom is the most important part of this whole question of sensitization.' It may be well to remind the author that Lewis was careful to use the word 'h-substance' and though he brought out that this substance had histamine-like properties, he did not say it was histamine. There is no doubt that there is a strong resemblance between the symptoms of anaphylaxis and histamine intoxication, but it remains to be proved that histamine causes anaphylactic shock and allergic conditions such as bronchial asthma and hay fever.

From an ethical point of view, it would probably arouse less criticism if such booklets were distributed only to patients, not, as the author puts it, 'written for my patients and friends.' There is no harm in giving each patient a booklet which will tell him something about the sickness from which he suffers and which should include general instructions with a view to mitigating the symptoms. The booklet should also have a definite place for the writing by the physician of special orders for the individual patient.

#### LIGNASAN AND MERCURY POISONING

*To the Editor*—Please give me your opinion of Lignasan, which is being manufactured by the du Pont de Nemours Company. The active ingredient of this preparation is ethyl mercury chloride, which at the present time is present to the extent of 5 per cent in this compound. This is mixed with other inert substances. This ethyl mercury chloride is added to water one pound to fifty gallons of water and the timbers fresh from the saw are dipped in this solution. The presence of the ethyl mercury compound effectively prevents the growth on the surface of the boards of various stain fungi commercially known as blue stain. A great many tests have been carried out, not only by the du Pont Company but by the pathologists of the United States Bureau of Plant Industry. Ethyl mercury chloride is, of course, a very volatile substance, and it rapidly leaves the surface of the boards. I have been advised by my friends of the Bureau of Plant Industry that in all probability all of it disappears in from sixty to ninety days. It has been proposed that we use this substance for the dipping of cross ties. I am somewhat hesitant about the application of this preparation owing to the nature of the active ingredient. I have consulted a number of dermatologists as well as internists on this question and they confirm my doubts. 1. What effect if any would the handling of the solution as described have on individuals who would necessarily have to handle the wet ties after dipping? By which question I mean the effect on the hands or skin or due to possible inhaling of the volatile compound. 2. Would the inhaling of the volatile compound during the process of seasoning that is during the two or three months that the evaporation of the toxic compound would take place be likely to have any effect on the men in the immediate vicinity of the piles of ties or timbers so treated? I have had a lot of experience both in Europe and in this country in the study of arsenic compounds used in the preparation of wall paper impregnated into wood and so on and I am wondering whether we might be facing the same or a similar situation in connection with this ethyl mercury compound.

CONSULTING TIMBER ENGINEER  
Missouri Pacific Railroad Company, St. Louis

**ANSWER**—The Joint Committee on Sap Stain Control working under the auspices of the Federal Bureau of Plant Industry published the following statement in December, 1932, concerning Lignasan:

In spite of the rather wide and rapid adoption of the new Lignasan treatment it was obvious that certain inherent weaknesses existed. First among its limitations is the possibility of the mercury injury attached to its use. While no cases of this type of injury have been reported to date where the treatment was used at the recommended strength, minor cases of skinburn have been encountered chiefly, however, as a result of careless handling of the powder or use of solutions stronger than those recommended. Although no great danger may exist it is obvious that the use of a nonmercurial compound in which the possibility of injury is definitely removed is more desirable.

It is obvious then that the present treatments are in need of improvement or that the search should be continued for new and more efficient treatments.

This statement implies answer to the specific questions raised in the query but may be amplified as follows:

1. It is believed that a mercurial dermatitis may arise among some unprotected workers handling wet ties after dipping.

Although the amount of mercury in the solution, as made up, is minute, rapid concentration takes place owing to the evaporation of the water leaving relatively high concentrations of mercury on the surface of the ties or lumber. This is to be expected as the direct result of contact with mercury and is not due to the inhalation of the volatile compound. It is possible that some mercury may enter the body through the skin and lead to systemic mercury poisoning. The hazard however, is not so great as from the use of corrosive mercuric chloride solution in the ordinary course of medical treatment. No exact information is known to be available.

2 The inhalation of the volatile compound during the process of seasoning may be expected to eventuate in mercurialism provided the quantity of mercury vapors is high. The daily absorption of from 0.77 to 1.29 mg of mercury is regarded as capable of inducing mercury poisoning. Consideration must be given to the likelihood that most ties will be stacked in the open air outside of buildings. Apart from the initial stacking shortly after dipping it is unlikely that practical conditions of exposure may be regarded as hazards. A simple test for mercury in the air may be found in the exposure of selenium indicator papers, which change color in characteristic fashion in the presence of mercury. Such test papers may be procured from any large chemical supply house.

It is not known that this test has been applied to vapors of organic mercury compounds so that the foregoing statement is an assumption based on experience with inorganic mercury compounds.

A good discussion of mercury poisoning from minute quantities of mercury vapors may be found in an article entitled *Mercurial Poisoning. A Report of Poisoning From Small Quantities of Mercury Vapor* by J. A. Turner (*Pub. Health Rep.* 39:329 [Feb. 22] 1924). Extended information may be procured from G. N. Harrison, Executive Officer, Joint Committee on Sap Stain Control, Federal Bureau of Plant Industry, Washington, D. C.

#### DROOLING OR PTYALISM IN CHILD

To the Editor.—Please advise me regarding the treatment of drooling in a 2 year old boy. This symptom has been present since the age of 4 months. The eruption of the teeth has been regular. The drooling has not been affected in any way by the eruption of the teeth. There is no apparent pathologic condition in the mouth. At present there is almost a continuous flow of saliva from his mouth. This causes a severe irritation of the skin over his chin and wets his clothing.

C. E. JOHNSON, M.D., St. Paul

ANSWER.—Drooling, or ptyalism, is the term employed to denote excessive secretion of saliva. However, in a given instance it may be difficult to determine whether there is actually an increased secretion or whether a normal amount of saliva is being allowed to drool from the corners of the mouth. In some instances the difficulty is simply one of swallowing the normal secretion, for example in infancy and in bulbar paralysis, in mercurial stomatitis there is increased salivation, besides difficulty in swallowing, and in certain functional or hysterical cases there is excessive secretion with no difficulty in swallowing. The latter condition has been termed 'ptyalorrhea'. It should be remembered that the mouth in early infancy tends to be dry and the tongue is also dry and is generally covered with a whitish coating. This dryness of mouth and tongue is due to the small amount of saliva excreted by the new-born. Salivary secretion becomes more active by the second month of life, and by the fourth month the secretion is usually well established and the infant drools. At this period diastasic activity first becomes appreciable and from the fourth month to the end of the first year the amount of saliva becomes greater and its diastasic properties increase correspondingly. The eruption of teeth appears to be in no way connected with the amount of salivation.

The secretion of the salivary glands is influenced by nervous stimuli from the chorda tympani nerve, a branch of the facial nerve, and also by cervical sympathetic nerves from the superior cervical ganglion. These nerves carry not only secretory but also vasomotor fibers. Therefore there are secretory fibers from cerebral innervation, and trophic fibers of sympathetic origin regulating salivary secretion. In the case in question if the various drugs are eliminated that may cause excessive salivation when taken internally or applied externally, if no form of stomatitis is present and if there is no difficulty in swallowing a normal amount of saliva due to local lesion or pseudobulbar paralysis the excessive secretion must be considered due to reflex stimulation.

Local reflex irritation of the fifth nerve may be caused by a jagged tooth, a foreign body as a fishbone impacted in the

gum, a ranula, a salivary calculus, or an irritation produced by a corrosive substance or recent injury. Other reflex influences, as nausea, gastritis, dyspepsia and gastric ulcer, may cause excessive salivation. Lack of proper cerebral control causes the drooling noted in imbeciles, idiots and other mental patients. Finally a purely functional cause of excessive salivation must be assumed. If the various physical and reflex causes for the drooling in the case in question can be ruled out, the condition is probably an excessive physiologic secretion in a young child, which will tend to correct itself. Various greases or salves to protect the skin of the chin may prove helpful, as well as a bib or a frequent change of clothes.

#### HIBBS OPERATION FOR SPINAL FRACTURE

To the Editor.—Can you tell me where I may secure the detailed technique of the Hibbs operations for spinal fracture?

P. D. McLEOD, M.D., Tonopah, Nev.

ANSWER.—The technic for the Hibbs operation for spinal fracture is similar to the technic he described for fusion of the spine in cases of tuberculosis of the vertebrae. This is given as follows by Hibbs:

An incision is made through the skin and subcutaneous tissue, exposing the tips of the spinous processes of the vertebrae to be fused. By means of special periosteal elevators, the spinous processes the posterior surfaces of the laminae and the bases of the transverse processes are bared of periosteum. Gauze packs are inserted to prevent oozing.

The ligamentum subflavum is removed from the laminae with a curet, and the articulation of the lateral processes is destroyed in order to establish a bone contact at this point. With a bone gouge a substantial piece of bone is elevated from the adjacent edges of each lamina, of half its thickness and half its width. The free end of the piece from above is turned down to make contact with the lamina below and the free end of the piece from the lamina below is turned up to make contact with the lamina above.

Each spinous process is then partially divided with bone forceps and broken down forcing the tip to come into contact with the bare bone of the vertebra below. Thus is established contact of abundant cancellous bone at the articulations of the lateral processes laminae and spinous processes. The periosteum and ligaments which together have been pushed to either side and lie practically as an unbroken sheet, are brought together in the middle with interrupted sutures of ten-day chromic catgut. The subcutaneous tissue is then closed with a continued suture of plain catgut, the skin wound is closed with sutures of ten-day chromic catgut, and sterile dressings and an immobilizing brace or removable plaster cast are applied.

#### OXYGEN IN PNEUMONIA

To the Editor.—In the use of oxygen in the treatment of pneumonia 1. What is the danger of too great a concentration of oxygen? 2. Is there danger in continuing the use of oxygen after the period of oxygen want has been passed? Please omit name.

M. D. Minnesota.

ANSWER.—1. Numerous observations on animals since the time of Paul Bert (1878) have shown that high oxygen concentrations were injurious to the lungs and some of the other organs. (References to this phase of the literature are given by Boothby on page 2107 of his article on oxygen therapy in *THE JOURNAL*, Dec. 10, 1932, p. 2026 and Dec. 17, 1932, p. 2106.) With increased oxygen concentrations of less than one atmosphere (760 mm. or 100 per cent) and above 70 per cent the chief deleterious effect is directly on the pulmonary tissue, causing congestion and edema. The pulmonary epithelium frequently desquamates. Actual pneumonia is often produced. The lungs of some animals are more susceptible than are the lungs of other animals to injury by an increased oxygen concentration. It may be that under certain conditions some human lungs may be more sensitive to injury by excessively high oxygen concentrations than are others.

While no one has demonstrated harm to human individuals from concentrations of 80 or 90 per cent, it is inadvisable to use concentrations for any length of time above 60 per cent, as above this concentration the pulmonary tissue of some animals is definitely injured and in some instances a fatal pneumonia is produced. Concentrations up to 60 per cent at sea level (450 mm.) can be considered safe.

2. There is no danger in continuing the use of oxygen after the period of oxygen want is passed, on the other hand, there is no advantage in so doing except for a short period while in doubt about whether or not oxygen is still needed.

# MATTISON'S BALANCED INSOLE SHOES

To the Editor—I received a pamphlet regarding Dr Norman D Mattison's balanced insole shoes manufactured by the Musebeck Shoe Company. Many things are claimed for these shoes and the feet are blamed for many illnesses. This booklet was handed to me by a local shoe dealer who has asked the status of Dr Norman D Mattison. Please let me have any data you have.

JOSEPH L BENTON MD Appleton Wis

ANSWER—Mattison is listed in the American Medical Directory as Mattison Norman D (H) b76 N Y 9,06 107 —(118 Union St, Montclair, NJ 114) office 33 W 42d St New York.

As is so commonly the practice in making these pamphlets, unusual unreasonable and ridiculous claims are made. The chart showing a human skeleton is headed 'conditions related to faulty foot posture relieved by correct foot balance. Many of the conditions mentioned may be related to faulty foot posture in certain cases, but they are not necessarily relieved by correct foot balance.

For example to say that stiff neck headache congestion strain localized pain and neuritis of the head and neck can be relieved by correct foot balance is ridiculous.

Such terms as nervousness compaction of the spine and neurasthenia are vague are indefinite, and should not be used in this connection.

The booklet contains the terms 'flat feet,' 'pronation' "muscle imbalance fallen arches and weak ankles as though they might not all be the same condition. The term 'defective gait' is indefinite.

It would be a blessing if a simple apparatus like a balanced insole shoe could correct the list of conditions mentioned. Of course to the intelligent person this is ridiculous.

Perhaps Mattison is 'one of the most famous foot specialists in America' but five members of the American Orthopedic Association who were consulted had never heard his name.

# INTRAVENOUS MEDICATION FOR HYPERTENSION

To the Editor—I would appreciate information regarding intravenous medication for arterial hypertension due to arteriosclerosis in a patient about 60 years of age. Please omit name.

MD Pennsylvania

ANSWER—It is doubtful whether intravenous medication is justifiable for hypertensive arterial disease per se. Iodides injected intravenously cause a transient fall in the arterial tension but this fall is not sufficiently prolonged to warrant clinical use. As iodides are readily absorbed from the alimentary canal intravenous administration is clearly unjustified. In acute emergencies or vascular crises with sudden severe elevation of the arterial tension (as occurs in eclamptic and pre-eclamptic intoxication) magnesium sulphate administered either intravenously or intramuscularly may be of value. Thus introduced magnesium sulphate is not cathartic but acts as a cerebral depressant and antispasmodic. Apparently the hypertonic 10 per cent magnesium sulphate causes cerebral dehydration or at least tends to diminish the cerebral edema that is a part of the eclamptic state. The dose for intravenous or intramuscular injection is from 4 to 10 cc of a 10 per cent solution. The reduction of arterial tension persists for several hours and remarkable control over the convulsions has been reported. In acute glomerular nephritis with arterial hypertension magnesium sulphate reduces the neuromuscular irritability and also diminishes the hyperpnea. Thus in acute intoxications in which arterial hypertension is secondary to the intoxication and central nervous system irritation magnesium sulphate may be of great value but in the management of hypertensive arterial disease it has no place especially in elderly patients. Its administration is not without risk even in younger persons and acute myocardial injury is to be feared.

Relatively massive doses of calcium chloride in instances of severe renal injury with renal decompensation create diuresis and some reduction of the arterial tension. Except in instances of edema or severe renal failure the intravenous injection of calcium chloride is not justified. Hypodermic injection of various tissue extracts for arterial depression has some highly enthusiastic advocates. A number of hepatic extracts have received extensive clinical trial but the reduction of the arterial tension is too transient to be of lasting benefit. Hypertensive patients feel too well to continue hypodermic medication two or three times a week for months and any therapy of hypertensive disease must be long continued to yield satisfactory therapeutic results. Extracts from voluntary muscles and from the brain kidneys spleen and heart have all been studied they all act quite similarly and produce a transitory decrease in the arterial tension and coronary dilatation. They are administered hypodermically not intravenously. It is probable that the

effects of these various tissue extracts may be attributed to adenosin and not to so-called specific circulatory hormones. The experimental administration of adenosin phosphate results in circulatory changes almost indistinguishable from those induced by the various tissue extracts.

In the instance of a patient 60 years of age with hypertensive disease and arteriolar sclerosis, no intravenous medication is indicated or justified for the hypertensive disease per se. Should coincident difficulties arise such as cardiac decompensation, some intravenous medication might become indicated but not otherwise.

# USE OF THYROID

To the Editor—A woman aged 63 has all the signs and symptoms of a lack of thyroid secretion. This is borne out by a basal metabolic reading which gives her rate as —22. I put her to bed about four weeks ago after she had been on 1 grain (0.065 Gm.) of thyroid for one week, and 2 grains (0.13 Gm.) for a week because she complained of weakness, anorexia and nervousness. At this time her pulse rate was 50 the same as it had been and she appeared sluggish. At this time thyroid therapy was discontinued because she gave a history of the same effect several years previously when she was treated for the condition in another town. After three or four days at rest her appetite reappeared and thyroid 2 grains was again given with the same result as before even though the patient remained in bed. Again when the thyroid substance was withdrawn the patient's appetite returned. I would appreciate any suggestions you may offer as to how I can administer thyroid medication without these disagreeable symptoms. The patient feels better when she is taking the tablets except for the weakness produced by the inability to eat.

MD North Carolina

ANSWER—This story is rather puzzling and several points should be cleared up. Was the dosage of thyroid 1 grain a day or actually only "1 grain for one week"? If the latter then certainly she did not receive enough thyroid to have a physiologic effect. Furthermore, one wonders whether the pulse rate of 50 was connected in any way with disease of the heart, and whether the heart condition has been studied. It is most unusual for thyroid to decrease the appetite.

Two suggestions for treatment are offered. First that the thyroid be given to the patient without her knowledge of what medication she is receiving and if this is not successful thyroxine might be used intravenously. With a basal metabolic rate of —23 there is little danger from the intravenous use of thyroxine. It is generally considered that 1 mg will raise the basal metabolic rate approximately 2 per cent and that the maximum result occurs about ten days after the injection.

# INFRACTION OF THE METATARSAL HEAD

To the Editor—Will you kindly tell me what Freiberg's infraction of the second metatarsal head is? I have not been able to find anything concerning it in textbooks on surgery. I am interested to know something of the pathology and symptomatology of this condition. Please omit name.

MD Wisconsin

ANSWER—Freiberg's infraction of the metatarsal head was first described by Freiberg of Cincinnati in 1913 in a paper read before the Southern Surgical and Gynecological Association. He saw his first case in 1903 but the paper reporting six cases did not appear until August 1914.

Kohler of Wiesbaden Germany described the condition in 1915 and reported five cases in 1920. The number of cases reported up to 1923 was sixty three. Two cases were reported in an article by Philip Lewin in THE JOURNAL July 21 1923, page 189 bringing the total up to sixty-five.

The etiology of the condition is unknown. It is considered analogous to Legg Calve Perthes disease occurring in the hip and to Osgood-Schlatter's upper tibial epiphysitis occurring at the knee. The important factors in the etiology are trauma circulatory disturbances and infection. The gross pathologic changes consist of flattening of the metatarsal head with broadening of the neck and distal portion of the shaft and irregularity of the epiphysal line widening of the metatarsophalangeal joint space, and diminished cupping of the articular surface of the proximal phalanx with occasionally loose bodies or a line of incomplete fracture without displacement.

The symptomatology includes the uniform complaint of pain referred to the region of the affected metatarsal head, which is usually the second or third. Swelling is usually present. No marked increase of joint tension is demonstrable as a rule. There is a marked sharply circumscribed sensitiveness to pressure over the metatarsal head and the metatarsophalangeal joint. Abnormal local temperature is unusual. There is definite limitation of motion with muscle spasm. Abscess formation has not occurred in the cases reported. To the roentgen ray must go the credit of recognizing this condition. The changes revealed are flattening of the metatarsal head, broadening of

the neck and distal portion of the shaft, irregularity of the epiphyseal line widening of the metatarsophalangeal joint space, diminished cupping of the articular surface of the proximal phalanx, and an occasional line of incomplete fracture without displacement

#### TREATMENT OF RESISTANT ACNE

*To the Editor*—A man of my acquaintance has had acne for about fifteen years. He is yet under 30 years of age. He has had the vaccine therapy, the roentgen treatment, diets (mostly consisting of the leaving off of sweets and starches) examinations giving negative results on salicytomy, appendectomy and various drugs including tin and yeast but he still has acne although it probably is getting better since it does not seem to be as severe as it was ten years ago. Even now though it has exacerbations and there are a few eruptions all the time. It has been severe on the face, neck, back and chest and now it is on the arms and is coming down on the forearms. The eruptions are not only small pimples but mostly larger boils. The exacerbations come with or without treatment. Treatment does not seem to have any effect. I might add that the Wassermann reaction on two occasions has been negative. There is a family history on the father's side of some acne but nothing like the present severe form. Do you have any recommendations as to any thing that might give relief? I realize that this is a problem that has been unsuccessfully combated for many years. Please omit name.

M D Georgia

**ANSWER**—One should make sure that there is no focus of infection and that the gastro-intestinal tract is functioning normally. If secondary anemia is present it should be corrected. Daily habits and personal hygiene (including sex habits) should be of a kind that is conducive to health. If there is much dandruff of the scalp the scalp and hair should be washed twice weekly with green soap and a suitable lotion should be applied daily.

The skin of all the affected areas should be kept very dry and even chapped by using the following treatment. The skin of these parts should be washed every night with ordinary green soap. Then the subjoined lotion should be well shaken and sopped on all the areas where lesions tend to appear.

Betanaphthol	0.25	Cm.
Solution of sulphurated lime filtered	15	cc
Zinc sulphate	15	Gm
Sulphurated potassa	15	Gm
Rose water sufficient to make	120	cc

The zinc sulphate and the sulphurated potassa are dissolved separately in half the rose water. These two solutions are then combined. Finally the solution of sulphurated lime and the betanaphthol are added. It may help to apply ultraviolet radiation in suberythema doses to the entire body daily, and in erythema doses to the affected areas twice weekly.

#### SPASTIC DYSMENORRHEA

*To the Editor*—A woman aged 24 has had dysmenorrhea since she was 14 years of age. During the first three days of each menstruation she has severe pain in the lower part of the abdomen with nausea and vomiting. The most prominent symptom of her condition is vomiting. I have seen cases of dysmenorrhea but the vomiting in this case is something I have never heard of. She vomits constantly for three days becomes dehydrated and is on the verge of acidosis. About a year ago on recommendation of another physician she had an application of a small dose of radium. She was told that her menstruation would cease for about a year to sixteen months. Following the application of radium her menses ceased and she was free of all the symptoms for seven months. In the last few months however the old symptoms have reappeared. With each apparent menstrual period she has severe pain and constant vomiting for three days but there is no menstrual bleeding. Also instead of having this once a month she has it now twice a month. Her physical examination is negative except that during menstruation there is an enlargement of the thyroid. The basal metabolism is normal. Will you kindly suggest what can be done for her? Especially the vomiting. What about endocrine therapy? Why have the symptoms reappeared without menstrual bleeding? Please omit name.

M D

**ANSWER**—The patient apparently suffers from primary spastic dysmenorrhea, a condition caused by one or a combination of the following factors: (1) hypoplasia (subpubescence) of the uterus, with a preponderance of fibrous over muscular elements, (2) cramplike uterine contractions due to an excess of estrin in the blood, (3) psychogenic factors, and (4) constitutional causes. In the light of most recent experimental work (Novak and Reynolds) the second cause given appears most plausible. One cannot, however, exclude the influence of psychogenic factors in this case, particularly in reference to the nausea and vomiting.

The fact that the subjective symptoms returned periodically without the appearance of bleeding may be explained by a resumption of ovarian activity after a seven months complete inhibition due to the action of radium. The follicular apparatus again responds to the stimulation of prolactin A from the hypophysis, and the estrin thus produced exhibits its effect on the uterine musculature. The endometrium, however, has not

regenerated sufficiently to respond to the action of the hormone. The nausea and vomiting, while possibly explained as reflex symptoms of pelvic origin, are more likely explained on a neurotic basis.

Therapy should be directed along general lines with special emphasis on advice concerning sex hygiene, special exercises, and psychotherapy (advisedly outlined by a psychiatrist). Endocrine therapy in dysmenorrhea is still in the experimental stage. Small doses of thyroid extract may be helpful.

#### STERILITY AND NECROSPERMIA

*To the Editor*—I have a patient who has been married for more than ten years and is sterile. The wife of the patient had an endocervicitis and gives a history of a vaginal discharge which cleared up by local treatment and cauterization. Her tubes have been proved to be normal by roentgen examination after injection of iodized oil. Her Wassermann reaction is negative, her general health good. Her tonsils are questionable or apparently infected. The husband's history is of some urethral discharge in Sweden some years ago before marriage diagnosed by the physician at that time as not gonorrheal for which he was not treated and he has never noticed any discharge since. He is markedly obese weighing over 200 pounds or 90 Kg (overweight for his height). The Wassermann reaction is negative. His general health is good. After massage of the prostate which is slightly enlarged urethral smears showed many pus cells but no gonococci. Examination of the semen within the proper time of coitus showed many in the field but they were without motility or dead. Under local treatment of massaging the prostate and vaccines the urine is clearing up. There is no stricture of the urethra. Have you anything else to suggest in the case for dead spermatozoa? If the spermatozoa come back to life and without results would you suggest a dilation and curettage?

WILLIAM FRANKMAN M D Boston

**ANSWER**—Sterility in this couple is due to the male factor, necrospemia being the direct cause of the failure to conceive. In addition to the local genital disturbance the husband should be treated for obesity, which probably is due to metabolic disturbances. There is no indication to treat the female partner and no reason for dilation and curettage. When the husband presents satisfactory spermatozoa, the postcoital and tubal patency tests may be repeated.

#### USE OF THYROID IN ICHTHYOSIS

*To the Editor*—I have under my care a white man aged 26 who is decidedly underweight (108 pounds or 49 Kg) his height is 5 feet 8 inches (173 cm). He also has a very rough scaly skin especially on the back, arms and legs. In spite of all efforts to gain weight such as rest and tonics he constantly maintains the foregoing weight. His basal metabolism is -12, the blood sugar is 85 mg, the heart and lungs are normal, the Wassermann and Kahn reactions are negative. I might mention that his father suffers from such skin trouble to a lesser degree as does also one sister and one brother. There is no scantiness of hair except on the legs and thighs where the skin is so rough it actually imparts the feeling of sandpaper. My question is this: Would not thyroid extract tend to cause a further decrease in weight or would insulin while causing an increase in weight, also clear up this skin condition? Kindly omit name.

M D Ohio.

**ANSWER**—The skin condition is evidently an ichthyosis. Although the dosage of thyroid extract necessary to improve the skin should not cause any loss of weight, it might be wise in this case to give insulin first in an effort to increase weight. Five units half an hour before each meal is the best stimulant for the appetite. The increase of weight might have some slight beneficial effect on the skin, increasing the production of sebum and the thyroid extract will not interfere with the effect of the insulin.

#### TIME INTERVAL AND PROOF OF DEATH FROM POISONING

*To the Editor*—What is the longest time a body has been buried and then taken up to ascertain the cause of death? Is it possible to secure definite pathologic proof of poison having been taken after the body has been buried for some time?

MILDRED E. JEFFREY Dayton Ohio.

Executive Secretary Montgomery County Medical Society

**ANSWER**—Bodies have been exhumed and examined years and years after burial. No definite time limit may be fixed for the longest interval between burial and examination. In the case of mummies, thousands of years may have elapsed. In the case of certain historical persons, examinations of the bodies have been made hundreds of years after death. Definite evidences of corrosive and coagulating poisoning may be obtained after the body has been buried for some time, provided of course, that it is fairly well preserved. In the case of bodies well embalmed with formaldehyde solution, such evidence may be obtainable months and perhaps years after burial.

## DUODENAL DILATATION

*To the Editor*—A white woman aged 26 has a marked duodenal dilatation the result of partial obstruction at the duodenojejunal angle. Different methods of raising the lower abdomen have produced no alleviation of weight loss vomiting and epigastric discomfort after meals. This condition has been present for four years and although her weight has dropped from 115 to 75 pounds (from 52 to 34 Kg.) her vitality is fairly good. What further medical treatment would you advise? What has surgery to offer? Please omit name.  
M D Pennsylvania.

**ANSWER**—There is usually an alkalosis in cases of this type. If hydrochloric acid has not been tried, it might be beneficial if used in full doses after each meal. Because of the length of time the trouble has lasted and the statement that raising the lower abdomen has not alleviated the condition most likely it will be necessary to have surgical aid. An anastomosis of the duodenum to the jejunum proximal and distal to the obstruction usually brings excellent results.

## EFFECT OF AMPUTATION ON BLOOD PRESSURE

*To the Editor*—Would the amputation of the lower extremities one at the hip joint the other below the knee have any end results on the blood pressure?  
S C Broadstreet M D Mount Pleasant Texas

**ANSWER**—Such amputation as mentioned would not have any end results on the blood pressure so far as loss of blood is concerned particularly if the tourniquets are applied appropriately so as to render the limb quite bloodless prior to the operation. Even so such loss of blood (retained in the limbs) would be compensated for by an increase in the general vasoconstrictor tone. Certainly the surgical shock likely to attend a double amputation of this type with the usual and profound drop in the general arterial blood pressure is of greater practical moment than the actual loss of blood (hemorrhagic shock). On complete recovery from the operation, the blood pressure will assume its preoperative level.

## KELOID

*To the Editor*—A patient aged 25 was bitten on the face by a dog eighteen years ago. The wound healed promptly and gave no trouble until recently when a nodule was noticed under the scar. As the scar was very irregular the scar and nodule were removed a nice straight scar being left in the natural crease. The scar now appears thickened through its entire length and is slightly prominent. This in my judgment is a keloid and if you agree with my diagnosis which do you advise using x-rays or thiosinamine? If you advise the latter kindly give method and solution formula.  
M D

**ANSWER**—The condition as described is one of hypertrophic or keloidal scar. Being of recent development, it should respond rather promptly and satisfactorily to radiation therapy either x-rays or radium may be used. Thiosinamine is a drug used extensively in India where radiotherapy is generally inaccessible. It is destructive in its action and may leave unsightly scars.

## TREATMENT OF RANULA

*To the Editor*—A patient has a stenosis in the duct of his right submaxillary gland so that there is a ranula at the base of the tongue about 1½ inches from the frenum. Although I have several leading works on surgery I do not find in them any good or detailed statements of methods of treatment. Please omit name.  
M D New York

**ANSWER**—Methods of treatment are described by

- Thompson J E. Relationship Between Ranula and Branchiogenic Cysts. *Ann Surg* 72: 164 (Aug.) 1920.  
Blair V P. Ranula. *Ann Surg* 77: 681 (June) 1923.  
Blair V P. Surgery and Diseases of the Mouth and Jaws. St. Louis: C V Mosby Company 1912 revised 1918 1920.  
Thompson J E. Cysts in Neck Arising from Remains of Branchial Clefts (Surgery and Embryology). *Surg Gynec & Obst* 31: 19 (July) 1920.  
Gilmer T L. Lectures on Oral Surgery. L. S. Matthews 1903.

## INJURY TO LIP DURING EXTRACTION OF TOOTH

*To the Editor*—On page 1362 THE JOURNAL, April 29 a correspondent asks about an injury to the lip of a child during tooth extraction under local anesthesia. I have seen a number of these cases and believe that they are due to the anesthetic solution rather than to a bruise. Sterling V Mead in Diseases of the Mouth first edition page 327 discusses the condition and designates it neurotrophic ulcer. His description follows: Ulcers appear on the lower lip near the angle after extraction of the teeth under local anesthesia. The ulcers appear the day following mandibular injection and vary in size from that of a dime to that of a quarter. They are not painful and have the appearance of a circumscribed piece of pearly white tissue superimposed on the epithelial tissue. They are probably due to irritation of the nerve in a susceptible person or to a solution which is too hot. It seems likely that the condition referred to probably was of this type.

RAYMOND A ALBRAI DDS Newark, N J

## Council on Medical Education and Hospitals

## COMING EXAMINATIONS

- ALABAMA Montgomery July 11 14 Sec Dr J N Baker 519 Dexter Ave. Montgomery
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The general oral clinical and pathological examination will be held in Milwaukee June 10 Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh
- AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee June 12 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha
- CALIFORNIA Reciprocity San Francisco June 14 Regular San Francisco July 10 13 Los Angeles July 24 27 Sec Dr Charles B Pinkham 420 State Office Bldg Sacramento
- COLORADO Denver July 5 8 Sec Dr Wm Whitridge Williams 422 State Office Bldg Denver
- CONNECTICUT Basic Science Prerequisite to license examination New Haven June 10 Address State Board of Healing Arts 1895 Yale Station New Haven Regular Hartford July 11 12 Endorsement July 25 Sec Dr Thomas P Murdock 147 W Main St Meriden
- HOMOPATHIC New Haven July 11 Sec Dr Edwin C M Hall 82 Grand Ave New Haven
- DELAWARE Wilmington, June 13 15 Sec Dr Harold L Springer 1013 Washington St Wilmington
- DISTRICT OF COLUMBIA Basic Science Washington June 29 30 Regular Washington July 10 11 Sec Dr W C Fowler 203 District Bldg Washington
- FLORIDA Jacksonville June 12 13 Sec Dr William M Rowlett Box 786 Tampa
- GEORGIA Atlanta June 14 16 Joint Sec Mr R C Coleman 111 State Capitol Atlanta
- ILLINOIS Chicago June 27 30 Supt of Regis Mr Paul B Johnson State House, Springfield
- INDIANA Indianapolis June 20 22 Sec Dr William R Davidson 413 State House Indianapolis
- KANSAS Kansas City June 20 21 Sec Dr C H Ewing Larned
- MAINE Augusta July 5 6 Sec Dr Adam P Leighton Jr 192 State St Portland
- MARYLAND Regular Baltimore June 20 23 Sec Dr Henry M Fitzhugh 1211 Cathedral St Baltimore Homopathic Baltimore June 20 21 Sec Dr John A Evans 612 W 40th St Baltimore
- MINNESOTA Minneapolis June 20 22 Sec Dr E J Engberg 350 St Peter St St Paul
- MISSISSIPPI Jackson June 22 23 Asst Sec Dr R N Whitfield Jackson
- NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II The examinations will be held at centers where there are five or more candidates June 26-28 and Sept 13 15 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia
- NEW JERSEY Trenton June 20 21 Sec Dr James J McGuire 1101 Trenton Trust Bldg Trenton
- NEW YORK Albany Buffalo New York and Syracuse June 26 29 Chief Professional Examinations Bureau Mr Herbert J Hamilton Room 315 Education Bldg Albany
- NORTH CAROLINA Raleigh June 19 Sec Dr B J Lawrence 503 Professional Bldg Raleigh
- NORTH DAKOTA Grand Forks July 5 8 Sec Dr G M Williamson 4½ S 3rd St Grand Forks
- OREGON Portland July 4 6 Sec Dr Joseph F Wood 509 Selling Bldg Portland
- PENNSYLVANIA Philadelphia and Pittsburgh July 11 15 Sec Dr Charles D Koch 400 Education Bldg Harrisburg
- RHODE ISLAND Providence July 6 7 Dir Dr Lester A Round 319 State Office Bldg Providence
- SOUTH CAROLINA Columbia June 27 Sec Dr A Earle Boozer 505 Saluda Ave Columbia
- SOUTH DAKOTA Watertown July 18 Dir, Dr P B Jenkins Waubay
- TENNESSEE Knoxville Memphis and Nashville June 15 16 Sec Dr H W Qualls 130 Madison Ave Memphis
- TEXAS Galveston, June 20 22 Sec Dr T J Crowe 918 19 20 Mercantile Bldg Dallas
- UTAH Salt Lake City June 28 29 Dir Mr S W Golding 326 State Capitol Bldg Salt Lake City
- VERMONT Burlington June 21 23 Sec Dr W Scott Nay Underhill
- VIRGINIA Richmond June 21 23 Sec Dr J W Preston 803 Medical Arts Bldg Roanoke
- WASHINGTON Basic Science Seattle July 13 14 Regular Seattle July 17 18 Dir Mr Harry C Huse Department of Licenses Olympia
- WISCONSIN Basic Science Milwaukee June 17 Sec Prof Robert N Bauer 3414 W Wisconsin Ave Milwaukee Regular Milwaukee June 27 29 Sec Dr Robert E Flynn 401 Main St La Crosse

## District of Columbia January Examination

Dr W C Fowler, secretary, Commission on Licensure, reports the written examination held in Washington, Jan 9-10, 1933. The examination covered 6 subjects and included 60 questions. An average of 75 per cent was required to pass. Eighteen candidates were examined 17 of whom passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine (1931)	85 3 87 5 88 2 90 9 92 1	(1930)	78 3
George Washington University School of Medicine	88 9 90 1 91	(1931)	87 3

Howard University College of Medicine	(1931)	81 4	83 8
University of Kansas School of Medicine	(1928)		84 8
Johns Hopkins University School of Medicine	(1927)		82 3
University of Maryland School of Medicine and College of Physicians and Surgeons	(1929)		80 7
University of Minnesota Medical School	(1932)		88 8
University of Cincinnati College of Medicine	(1932)		87 3
College	FAILED	Year	Per Cent
Howard University College of Medicine		(1931)	74 5

### Colorado January Report

Dr William Whitridge Williams secretary, Colorado State Board of Medical Examiners, reports the written examination held in Denver Jan 4-7, 1933. Two candidates were examined, both of whom passed. One physician was licensed by endorsement. The following colleges were represented:

Osteopaths	PASSED	Per Cent
		77 2 84
College	LICENSED BY ENDORSEMENT	Year Grad of
Cornell University Medical College		(1899) New York

### Iowa Reciprocity Report

Mr H W Grefe director, Division of Examinations and Licenses reports 5 physicians licensed by reciprocity with other states from Jan 16 to Feb 9, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad with	Reciprocity
Loyola University School of Medicine		(1928)	Illinois
Rush Medical College		(1929)	Illinois
University of Nebraska College of Medicine		(1928)	Penna.
Meharry Medical College		(1928)	Tennessee
University of Wisconsin Medical School		(1931)	Wisconsin

## Book Notices

**Chronic Arthritis and Fibrositis. Diagnosis and Treatment.** By Bernard Langdon Wyatt MD FACP Director The Wyatt Clinic Tucson Arizona Cloth. Price \$3.50 Pp 201 with 17 illustrations. Baltimore William Wood & Company 1933

Although the interest of the medical profession in chronic arthritis is growing it is still far from being commensurate with its medical, social and economic significance. The author of this volume has rightly emphasized that the main task of caring for patients suffering from this disease belongs to the general practitioner, an obligation which has been largely side-stepped in favor of the specialists, the spa physicians and the cultists. The book is intended as a handbook to provide the practitioner with a concise review of current knowledge on cause and treatment, it contains numerous practical suggestions and pertinent dicta. Although in reality it is a second edition of the author's book "Chronic Arthritis and Rheumatoid Affections" it has been so thoroughly revised and its general tone so altered and improved as to lay fair claim to its being a new book with the right to a new title. The causes, diagnoses and treatments of proliferative (atrophic) and degenerative (hypertrophic) arthritis of fibrositis (muscular rheumatism) and of gout are considered. The interesting statistics of Dublin on the mortality and morbidity from these diseases are reprinted from the former edition. The general principles of physical therapy and suggestions on prevention of deformity are discussed as are the uses of diets, drugs, vaccines and climato-therapy. The format is greatly improved over that of the first book. The book is open to the criticism that a considerable amount of it is from other publications. Roentgenograms, photographs and large portions of text are borrowed from the works of others, to whom credit, however, is generally given. The author's summary of his own experiences and of the results of treatment of his patients are so briefly condensed in the final chapter of only nine pages as to give the impression of an apologia. Perhaps there is too much deference to the experiences and opinions of others, thereby weakening the author's claim to personal authority. Regardless of this and of a few minor discrepancies the work is a practical introduction to the studies of these diseases. Although the author has not been sufficiently critical in some respects the book is free of personal fads and it presents in the main an honest summary of current opinion.

**Anleitung zur frühzeitigen Erkennung der Krebskrankheit im Auftrage des Landesausschusses zur Erforschung und Bekämpfung der Krebskrankheit in Sachsen.** Bearbeitet von Best, Fromme, Payr, Rostok, Saupé, Schmoll, Tonnendorf und Warnekros. Boards. Price 3 marks. Pp 134. Leipzig S. Hirzel 1932.

This volume was written on the request of the committee for investigation and combat of cancer in the state of Saxony, Germany, for the purpose of being a reliable guide to the general practitioner in one of his most responsible tasks, the early diagnosis of cancer. It must be admitted that the fate of cancer patients lies almost entirely in the hand of the general practitioner, since it is he who first sees the patient and on whom the responsibility rests as to the early diagnosis. Early diagnosis, however, is the *conditio sine qua non* in the successful treatment of cancer. In an excellent manner and without unnecessary theoretical ballast the presence of malignant disease in the various organs is discussed by the various authors. Much stress is laid on the clinical recognition of first signs and symptoms and on the differential diagnosis of cancer, while progress of disease and treatment is discussed somewhat less in detail. Cooperation with the specialist is urged whenever suspicion of malignant disease is aroused and no definite diagnosis can be reached. Although the book is written chiefly for the general practitioner, the specialist also might find some valuable hints and notes as to the early appearance of cancer in the various parts of the body.

**Specific Changes in the Blood Serum. A Contribution to the Serological Diagnosis of Cancer and Tuberculosis.** By S. G. T. Bendien. Serological Laboratory Zeist Holland. Translated by A. Pinney MD Director of the Pathological Department The Cancer Hospital London. Cloth. Price \$3.00 Pp 85 with 64 illustrations. St. Louis C. V. Mosby Company 1932.

This monograph contains the author's work of a flocculation test according to which it is possible to obtain a specific reaction by mixing serums with different concentrations of mixtures of acetic acid and sodium vanadate. While serums of normal persons flocculate at a certain concentration (tube 6), flocculation always occurs in lower concentration (below tube 6) in pathologic conditions such as carcinoma chiefly, but also tuberculosis, eclampsia and pregnancy. The author, however, admits some exceptions of that behavior and states that the reaction is not specific in definite diseases. Many statements are made with restrictions, and further investigations are announced. Since the reaction frequently was found to be positive in serums of carcinoma, tuberculosis, pregnancy and syphilis, known to be 'labile' serums it seems more than likely that Dr Bendien's reaction must be encountered among the nonspecific lability reactions. In 'labile' serums in which a disturbance in the colloidal structure of the plasma protein and in the globulin-albumin ratio is known to occur, flocculation or precipitation is likely to be produced by various substances. This is made all the more probable as Dr Bendien states that flocculation in the lower concentration was always parallel with increase of globulin, and vice versa. The translator says: Time alone can show the practical value of Dr Bendien's observations but there can be no doubt that this book presents a number of new facts.

**La technique de la curiethérapie.** Par Simone Laborde chef du service de curiethérapie à l'Institut du Cancer. Les actualités physiothérapiques. Publiées sous la direction du Dr Dubem III. Curiothérapie. Paper. Price 20 francs. Pp 121 with 12 illustrations. Paris Gauthier Villars & Cie 1933.

The introductory chapter on radiobiology of tumors discusses various theories concerning the biologic aspects of radiation. The theories of direct and indirect action of radiation, radiosensitivity and radioimmunity and the biologic effects of rays of varying quality are presented in some detail. Special attention is devoted to the time factor in radiation therapy. The author cites certain objections to Regaud's theory concerning the effect of the time factor on the radiosensitivity of neoplastic cells. The second chapter discusses the differences in biologic effects of beta and gamma rays and the effects of filtration. The principles and technique of telecurietherapy are briefly discussed and the construction of different apparatus used in various clinics is described. The relative advantages and disadvantages of radium element and radon are accurately presented and the conclusion drawn that the use of radon is best restricted to large centers and that radium element is economical and convenient in smaller centers. The latter method,

possesses some advantages over the former. The technic of surface irradiation and radium puncture is discussed and brief reference made to various forms of applicators. The author presents the points of view of the two opposing schools one based on massive irradiation, the other on division of the irradiation over a period of several weeks. The value of prolonging the irradiation in cancer of the skin and in cancer of the uterus is in the author's opinion not fully established, whereas she concedes the advantage of protracting the irradiation in the treatment of cancer of the mouth, larynx and pharynx. The use of massive irradiation in very short intervals is correctly condemned. The last chapter concerns itself with dosimetry and a description of methods of measurement. This small volume is a distinctly limited but accurate presentation of the principles and technic of radium therapy.

**Neurology in Podiatry.** By Joshua H. Leiner, M.D., Associate Attending Neurologist, Jewish Memorial Hospital, New York City. Edited by Maurice J. Lewi, M.D., Professor of Medical Jurisprudence, Albany Law School. Cloth, Price \$2.50. Pp. 126 with 9 illustrations. New York: Harriman Printing Company, Inc., 1932.

The purpose of the author is to present a neurologic textbook touching on the problems related to podiatry. He offers the practicing podiatrist a book that will help him recognize and aid in the elucidation of neurologic diseases and foot deviations that occur almost daily in his practice. He warns against the conception that foot conditions are isolated from the patient as a whole. The author believes that this booklet supplies a gap, namely, the essentials of neurology as they apply to the needs of the student of podiatry and the practitioner of that specialty. The author states that, in his opinion, infantile paralysis is as prevalent as measles but appears often simply as a mild cold with constitutional symptoms but without paralysis. This statement is open to severe criticism. This book should be of some value to students and practitioners of podiatry. It would seem that \$2.50 is a lot of money to pay for the material.

**Le genou. Anatomie chirurgicale et radiographique chirurgie opératoire.** Par Antoine Basset, professeur agrégé à la Faculté de Paris. Paper. Price 45 francs. Pp. 188 with 120 illustrations. Paris: Masson & Cie, 1932.

This brief and clearly written review of the knee in its surgical and anatomic aspects fills a want for the average surgeon covering particularly the surface and immediate underlying anatomy and technical descriptions of the avenues of approach to the joint. Too much attention and space however are given to a description of the incision into the knee joint to the detriment of any indications for its use. There is likewise a great deficiency in describing the pathology of various conditions involving the knee joint which may require operation or the indications for operation. The illustrations are enlightening and contain some new points not found in other works on this subject. The literature is fairly well covered as applied to some of the operative procedures advised. A few American authors are credited with their work. The book offers a rather ready reference for technical information on surgery of the knee joint but has little value beyond that.

**The Pelvis in Obstetrics. A Practical Manual of Pelvimetry and Cephalometry Including Chapters on Roentgenological Measurement.** By Julius Jarcho, M.D., F.A.C.S., Consulting Gynecologist, Hastings Hillside Hospital, New York. Cloth. Price \$6. Pp. 365 with 140 illustrations. New York: Paul B. Hoeber, Inc., 1933.

The author begins his preface with the remark that there is no work in the English language which covers the subject of the proper measurement of the pelvis and fetal head in adequate detail. In this he errs, because the textbooks by De Lee and by Williams discuss this subject adequately. He is correct, however, in his lamentation that unfortunately the trend of recent years has been toward the neglect of pelvic measurements with reliance on a dangerous test of labor. The book concerns itself almost exclusively with pelvimetry and cephalometry not only by means of the hands and pelvimeters but also by the use of special roentgen procedures. The author has made intensive studies of roentgen pelvimetry and cephalometry and is therefore well qualified to write on this subject. In the discussion of normal pelvis he takes up racial and national differences and their practical importance in obstetrics. The book is well printed, the illustrations are beautifully drawn, and the language

is simple and clear. There is an extensive bibliography and a commendably detailed index. Because of its limited field and because the essentials are included in all modern textbooks on obstetrics and have been written up in various medical journals in recent years there will probably be a limited demand for this book. However, it should be in the library of every obstetrician as a valuable work of reference.

**Atlas der Erkrankungen der oberen Luftwege mit besonderer Berücksichtigung des Epipharynx.** Von Dr. Siegfried Gräff, leitender Oberarzt am pathologischen Institut des Allgemeinen Krankenhauses Barmbeck in Hamburg. Lieferung 1. Paper. Price 17 marks. Pp. 33 with 36 illustrations. Leipzig: Curt Kabitzsch, 1933.

This is the first third of an atlas devoted to the diseases of the upper air passages, with particular reference to the epipharynx. The author has by special postmortem technic evolved a method of removing, in one mass, sufficient of these structures composing the upper air and food passages to illustrate with great effectiveness the diseases affecting these parts. The atlas consists of reproductions of photographs, many of them are colored and all of them are excellent. The diseases treated in this part, among a number, include hyperplasia and fresh tuberculosis of Waldeyer's ring, diphtheria of the pharynx with extension into the nasal cavities as well as the larynx and trachea, stenosis of the epipharynx, and primary carcinoma of the pharyngeal tonsils. In each instance there is a short case history, a summary of the postmortem observations, and adequate descriptions of the illustrations (there are numbers of them from each case). The author is to be congratulated on his praiseworthy effort.

**Physical Therapy in Infantile Paralysis.** By Arthur T. Legg, M.D., Assistant Professor of Orthopedic Surgery, Harvard, and Janet B. Merrill, Director of Physical Therapeutics, Children's Hospital, and Harvard Infantile Paralysis Commission, Boston. Reprinted from *Principles and Practice of Physical Therapy*, Edited by Doctors Harry E. Mock, Ralph Pemberton, and John S. Coulter. Cloth. Price \$1.50. Pp. 88 with 46 illustrations. Hagerstown, Maryland: W. F. Prior Company, Inc., 1932.

This monograph is a reprint of a chapter from *The Principles and Practice of Physical Therapy* by Drs. Mock, Pemberton, and Coulter. This section was written by two authorities on the subject and reflects the best work being done. The authors divide the subject, the course and treatment of anterior poliomyelitis, into four stages. There is an instructive chart showing the symptoms and signs in the febrile stage of the disease. During the last few years there has been definite progress in the treatment of infantile paralysis. These advances fall to a certain degree into the field of physical therapy. The objects of treatment during the second stage are the prevention of early deformities and the relief from sensitiveness. The authors recommend that active physical therapy should be started when the sensitive stage is over, that is at the beginning of the third or convalescent stage. Before any intelligent physical therapy or reeducation of the affected muscles can be started, a complete muscle examination must be made to show the extent of paralysis and the comparative strength of the different muscle groups. The treatment recommended during the third stage should lay emphasis on the prevention of fatigue and of deformity. This is the time, above all others, to concentrate on measures to reeducate the muscles and to develop strength wherever response can be obtained. They recommend the application of some form of external heat to be included in the first part of the physical therapy in any case of infantile paralysis in which the muscles are extensively involved. The physiologic effects of massage are similar to those of heat in that both increase the blood supply and keep up metabolism. The section on muscle training was arranged by Miss Janet B. Merrill.

The general purposes in muscle training in poliomyelitis are to maintain and improve the circulation and nutrition, to maintain muscle tone and prevent degeneration and atrophy of muscle fibers from disuse or from joint adhesions in cases in which the motor nerve supply is partially or temporarily interrupted, to keep up tone in muscles whose nerve supply has been unimpaired during the period of recumbency or disuse, to coordinate the remaining nerve centers when partial destruction of the centers controlling a part has occurred—reeducation by habit—while at the same time developing the fibers of the muscles that are still functioning normally, thus increasing the

strength of the entire muscle, to develop coordination and control

The general rules for muscle training are to avoid over-fatigue of a muscle by overtreatment by performing a movement rapidly or too many times, make each movement a voluntary active one performed by the patient in response to a stimulus see that the full arc of motion is obtained each time localize the exercise by fixing the adjoining parts of the body so that they will not take part in the movement, give resistance to develop strength wherever possible

Radiant heat with massage is desirable before the treatment is given to start the circulation and make the muscle give a better response. Ordinarily treatment is given once a day, six days a week. If the splint or apparatus is removed, care should be taken not to allow the part to hang, and no stretch or strain should be allowed on the muscles that are being kept shortened in the splint. The part that is being exercised should always be uncovered. If possible, one should be alone with the patient in order to secure his entire concentration

In conclusion, the authors offer a concise statement of what can be expected from physical therapy. The illustrations are excellent, particularly some instructive and easily understood pictures of braces on and off the patients, and pictures of a walking apparatus and a hydrotherapy pool. This chapter should be of great value to every physical therapist and orthopedic surgeon

**Studies on Alimentary Lipemia in Man** By N. I. Nissen. Paper Pp 176 with illustrations. Copenhagen. Levin & Munksgaard 1933

This well printed monograph is essentially the record of an attempt to establish a normal tolerance curve for fat analogous to the dextrose tolerance test. The section containing the detailed description of the author's work and results is preceded by a rather elementary chapter on the chemistry of fat, a second chapter containing an excellent analysis of the known methods for extraction and estimation of the various fat fractions of the blood, and a third chapter which summarizes the scientific literature on the triglyceride and lipid content of the blood in fasting normal individuals. Using the Bing-Heckscher method for estimation (on an ether extract of 0.1 cc of blood) and a test meal containing about 1 Gm of fat, in the form of cream, per kilogram of body weight the author establishes a normal curve which varies within rather wide limits. The effects of consecutive tests and the influence of simultaneous carbohydrate ingestion, as well as the deviations from normal in several pathologic states are reported. This volume which contains an excellent bibliography, will make a valuable addition to the library of those especially interested in fat metabolism, but it is hardly of clinical significance. The translation from the Danish is generally intelligible but often foreign in its idiom.

**An Index of Prognosis and End Results of Treatment.** By Various Writers. Edited by A. Rendle Short. M.D. B.S. B.Sc. Hon Surgeon. Bristol Royal Infirmary. Fourth edition. Cloth. Price \$12. Pp 599. Baltimore. William Wood & Company 1932

**An Index of Treatment.** By Various Writers. Edited by Robert Hutchison. M.D. F.R.C.P. Physician to the London Hospital. Tenth edition. Cloth. Price \$12. Pp 1027 with 93 illustrations. Baltimore. William Wood & Company 1931

These two volumes are part of a series developed by William Wood & Company and now issued over a period of some twenty years. Nine years has elapsed between the last two editions of the Index of Prognosis. This book, therefore, has been extensively revised, particularly as concerns the anemias, diabetes, cancer and intestinal obstruction, subjects in which prognosis has been greatly changed as a result of development of new methods of treatment. Attention is called to a new article on the various forms of mental disease treated according to modern classifications. The book is exceedingly useful not only as a guide to the physician in advising his patients in things they want to know, namely 'How long shall I be sick?' and 'Shall I get well?' but also as a guide to the literature of the subject and to new forms of treatment that have modified the course and prognosis of disease.

The Index of Treatment was previously issued in 1925. Six years has elapsed, therefore, to the time of production of the present volume, which is dated 1931. The book is a symposium volume in which more than a hundred physicians have cooperated, all of them, however, British. It is therefore an adequate

guide to British methods but for American physicians has the disadvantage of the use of the British pharmacopoeia and the mention of a considerable number of preparations not available in this country. One reads with amusement that redness of the nose is an indication of dyspepsia and can be treated by a stomach mixture containing bismuth carbonate and bicarbonate of soda. One fails to find any reference to surgical methods in the treatment of Raynaud's disease. The article on scurvy suggests fresh fruits and vegetables, but the word "vitamin" does not occur in it. The book contains a great deal of exceedingly useful material, particularly if the suggestions are read with judgment.

**Chronic Rheumatism and the Pre Rheumatic State** By J. D. Hindley Smith. M.A. M.R.C.S. L.R.C.P. Cloth. Price 5/6. Pp 154. London. H. K. Lewis & Company Ltd. 1932

The author presents a plea for further research and inquiry into the problem of the prevention of chronic rheumatism. He summarizes the results of his clinical work during the past five years. He believes three fourths of the victims of chronic rheumatism could have been saved from their suffering if the condition had been recognized early enough. He believes not only that the disease is becoming more common but that its worst features are to be found at an earlier age with each successive generation. 'Our parents complained of it at 60 and we ourselves are aware of it soon after 40 whereas it is now common in the rising generation during the 20's'. He estimates that one sixth of the working population of the United Kingdom is unable to work on account of chronic rheumatism. He summarizes the infective, metabolic and endocrine theories of etiology. In discussing vaccine therapy he says that if as is definitely proved vaccines are of great value in certain cases their failure in other cases cannot be due to a fault in principle but to some error resulting from ignorance or lack of experience either in technique or in the selection of the cases in which a vaccine should be employed. The author asks the following questions: 1. Has the streptococcus developed a tendency to alter in character and virulence during the past fifty years? 2. Has the streptococcus remained the same, but the reaction of the human race altered in relation to its activities during that time? 3. Have the various acute manifestations of streptococcal activity which were generally recognized in the past tended to produce in humanity a gradually increasing power of resistance to acute streptococcal disease, so that now, instead of causing an acute febrile disturbance which either killed or cured its victim, there results a long drawn out chronic warfare in which the victim suffers from a slow poisoning of the system? 4. Is humanity as a whole losing something of the quality of resistance against bacterial infection owing to the artificial conditions of civilization, which act by sterilization and disinfection as a protective barrier between ourselves and the bacterial world? 5. Are we becoming more 'allergic', that is, owing perhaps to more specialized development of the nervous system, more easily sensitized to foreign chemical substances, particularly proteins, which enter the blood from time to time so that these substances more easily become toxic to us, and produce signs of disease. The author has provided material of a sufficiently suggestive nature to provoke interest along similar lines. This little book is well worth reading.

**The Organs of Internal Secretion Their Diseases and Therapeutic Application With a Chapter on Obesity and its Treatment.** By Ivo Gellike Cobb. M.D. M.R.C.S. Fourth edition. Cloth. Price \$3.50. Pp 303. Baltimore. William Wood & Company, 1933

Here are an introduction, sixteen chapters, bibliography and index. The first edition published in 1916 was founded on articles the author had written for the *Medical Press and Circular*. There is rather more history than should be included in a work of this size. Too much of the book is devoted to theory particularly theories that now have little standing and but few facts to support them. The author has failed more over, to include some of the late work that must have been available while this edition was in course of preparation. The author questions whether vitamin D acts by simple stimulation of the parathyroids and feels that the evidence now is not sufficient to support that theory. He quotes Rendle Short to the effect that thyroid extract is quite as effectual as potassium iodide in tertiary syphilitic ulcers. He presents a beautiful picture of exophthalmic goiter and questions whether the thyroid

may not be more sinned against than sinning. He clings to the old classification designed by Plummer. "It is impossible to lay down any hard and fast rule to decide whether surgery should or should not be utilized in cases of Graves disease (as opposed to toxic adenomata)." The interesting suggestion is offered that patients suffering from thyroid deficiency who are unable to tolerate even small doses of thyroid are frequently helped by the addition of small doses of parathyroid. Dr Cobb cautions about the use of thyroid extract and is of the opinion that the initial dose is usually too high. The action of the various hormones in the anterior lobe are enumerated but in discussing clinical cases he does not differentiate closely as to the lobe involved. There are some inconsistencies. For example, the text indicates that the author does not know about the isolation of the hormone from the suprarenal cortex, yet it is included under the list of preparations. In discussing endocrine glands in nervous disorders, the author limits himself largely to a discussion of the war neuroses. When it comes to dementia praecox he confines himself to theory, which is not plausible and is not supported by evidence available now. In the application of hormones, the author indulges in more empiricism than is warranted and fails to include much specific therapy that might have been mentioned. Obesity and its treatment are well handled. He is quite properly of the opinion that a relatively small part of obesity is due to simple overeating and is of the opinion that something has gone wrong with the patient's metabolism which prevents his handling an average amount of food without laying on an excess amount of fatty tissue. The book cannot be said to contribute much to our knowledge of the glands of internal secretion and to the diagnosis and treatment of their disorders.

*Note di Immunoterapia in otorinolaringologia.* Da Dott. P. C. Monti otolatra dell'I. P. P. A. I. di Milano. Paper. Price 20 lire. Milan. Istituto Sieroterapico Milanese 1932.

This is a complete review in condensed form of the general theory underlying infection and immunity, with a rather comprehensive history of the development of the specialty of otolaryngology. Infections of the ear, nose, throat and larynx are briefly described, and the uses of the various types of biologic therapy, vaccine—antitoxins, bacteriophage and antiviruses—are clearly discussed. The author's advice as to the employment of these agents is generally conservative. Their employment is nowhere presented as a cure all but rather as a valuable adjunct to the surgical, constitutional and local treatment that may be indicated. In this respect this little manual is decidedly different from the usual publications emanating from manufacturing institutes of biologic products. Reference is occasionally made to proprietary antiseptics and other pharmaceutical products of unknown composition and not included in N. N. R. Otherwise the author has succeeded in his effort to present a scientific condensed summary of the biologic therapy of infectious processes of the ear, nose and throat.

*A Textbook of Materia Medica for Nurses.* By Edith P. Brodie. A. B. N. Fourth edition. Cloth. Price \$2.25. Pp. 324 with 16 illustrations. St. Louis. C. V. Mosby Company 1933.

This textbook seems to cover the subject of materia medica for nurses acceptably. In view of this one regrets to note three errors in each of the two prescriptions quoted on page 166, also that the word fluidextract which in the present pharmacopeia has been contracted into one word is written in two words as it was in the older pharmacopeias.

*Chronic Enteric Carriers and Their Treatment.* By C. H. Browning with H. L. Coulthard, R. Cruickshank, K. J. Guthrie and R. P. Smith. Medical Research Council Special Report Series No. 179. Paper. Price 1s. 6d. Pp. 80. London. His Majesty's Stationery Office 1933.

The authors review recent literature on the importance and incidence of typhoid and paratyphoid carriers, the method of identification of a carrier and the possible methods of treatment. They also include a study of their own on eight intestinal excretors and two urinary carriers. The practical significance of intermittence of excretion is fully recognized. Nonsurgical treatment of intestinal excretors is considered ineffective but when the gallbladder is the site of infection the application of surgical measures, cholecystectomy or, more rarely, cholecystostomy has yielded highly satisfactory results. The report is clear, concise and marked by good judgment.

## Medicolegal

### Proving Osteopathic Malpractice

(Williams v. Marini (11) 163 A 796)

The defendant, a licensed osteopath, called on the plaintiff for the first time on the morning of August 15. On the afternoon of the same day, using novocaine as a local anesthetic, he removed the nails of two of the plaintiff's toes which he said were already infected. He continued in attendance until August 22. On the following day a medical practitioner who had replaced the defendant osteopath found the toes gangrenous and that they had been so for at least three or four days. The case was diagnosed as dry gangrene and after waiting for the appearance of a line of demarcation the leg was amputated above the knee. The patient sued the defendant osteopath, charging negligence. From a judgment in favor of the patient, the osteopath appealed to the Supreme Court of Vermont.

The defendant testified that at the outset he tested the patient's circulation by palpation only. Osteopathic witnesses testified however that although that procedure was correct as far as it went in a case like the one under consideration it was not sufficient. The heart should have been tested, the blood pressure taken and an analysis of the urine made. One osteopath testified that when the discoloration extended up the foot it evidenced a serious condition, caused by faulty circulation, and probably indicated that the case should be turned over to a surgeon authorized to do major surgery. Another osteopath testified that the defendant's treatment was not up to the standard of good osteopathic practice, which required that the hot applications that the defendant applied to stimulate the circulation be supplemented by manipulative work. There was no error said the Supreme Court in refusing the defendant's motion for a directed verdict and submitting to the jury the question of the defendant's negligence. One who employs a physician is entitled to a reasonable and thorough examination before a remedy is applied. What such an examination involves depends somewhat on the patient's condition and the opportunities for examination open to the physician. The physician's conduct is to be judged not only by what he discovers by examination but by what he ought to discover, that is to say, by what the average practitioner of his particular school in that general locality would discover.

In making a motion for a directed verdict, in the trial court the defendant osteopath relied in part on an allegation of contributory negligence on the part of the patient. The court refused to grant the motion but instructed the jury that a sick man is not expected to exercise the same discretion and judgment as a well man. That instruction said the Supreme Court, was not error as applied to the present case. The evidence tended to show that the patient was suffering intense pain during the defendant's treatment and could not sleep during that time. The question of contributory negligence always turns on what a prudent man would do under the circumstances. It was quite apparent that a person in the condition in which the patient was could not be held to the same line of conduct as one who was well.

In the testimony of a nonsectarian physician who appeared as a witness the Supreme Court could find no error that warranted a reversal of the judgment. This witness testified that the use of novocaine was harmful, that septicemia is blood poisoning tainting the whole circulatory system, that the toe nails could have been removed to the patient's advantage if it were properly done, and that a general anesthetic should have been used. This testimony was objected to because the witness was not an osteopath and was therefore, it was alleged, not a competent witness on such matters. The defendant osteopath's care of this patient, said the Supreme Court, must be tested by what good osteopathic treatment requires, and by that alone. But even assuming that expert testimony from qualified osteopaths was necessary to sustain a verdict in this case that does not imply that only practitioners of osteopathy could be used as experts at the trial. Many questions pertaining to diagnosis, physical conditions and what they indicate progress of the infection, and other observed facts and their significance, can be established by nonsectarian practi-

tioners. However, when the propriety of treatment from an osteopathic standpoint is in question, the ordinary physician is not a competent expert, unless it is made to appear that the school to which he belongs and the school to which the defendant belongs require and employ the same treatment. On general matters, this nonsectarian physician could testify. The nearest he came to transgressing the rule was when he said that a general anesthetic should have been used. In this, however he was not attempting to say what good osteopathic practice would require, he was merely stating the medical fact that novocaine would, and a general anesthetic would not retard the plaintiff's circulation. The test is not what school the nonsectarian witness belongs to, but the premises from which he testifies.

The defendant osteopath, as a witness on his own behalf, insisted on characterizing the plaintiff's condition as a case of "local infection." Counsel for the plaintiff however, insisted on calling it "septicemia." The defendant on the witness stand, admitted that local infection and "septicemia" were the same thing. The court itself became involved in the controversy and charged the witness with "hedging" and "butting in." To these remarks of the court, the defendant osteopath objected. Without intending to magnify the importance of this exception, said the Supreme Court we take occasion to say that neither counsel nor the court itself can dictate to a witness the particular terms in which he shall clothe his testimony, unless he uses intemperate and indecent language. If there are two terms meaning the same thing, the witness may choose which one he will use. A cross-examiner, however, is entitled to a frank and direct answer to his proper questions and it is the province of the court to see that he gets it. In the present case, the error of the court if any was committed, was not sufficient to justify a reversal of the judgment.

The judgment of the trial court in favor of the patient was therefore affirmed.

**Injunction to Enforce Partnership Agreement**—Melrose and Low entered into a contract to practice medicine together. The contract provided that if Low, within the four years covered by the contract severed the partnership relation of his own free will and unprovoked by Melrose and set up practice for himself in Carbon county, the scene of the partnership practice, he should pay Melrose \$5,000 as damages. Within the four-year period, Low did sever partnership relations and set up in practice for himself within the county. Melrose thereupon brought suit for the damages agreed on. He argued, too, that the contract implied a covenant by Low that he would not practice medicine in Carbon county during the four-year period, and therefore he prayed the court to issue an injunction to restrain Low from so practicing. In the course of the trial, Melrose waived his claim for damages, on the assumption that the amount stated in the contract as damages was in fact a penalty and therefore payment would not be enforced by the court. The only remaining relief he asked for was an injunction and that the trial court denied. He appealed to the Supreme Court of Utah.

The findings in this case, said the Supreme Court, were sufficient to support the conclusion that Melrose was entitled to at least nominal damages, if he had not waived his claim to them. Assuming, but not deciding, that the contract in this case implies a covenant limiting Low's practice, Melrose, said the court, is nevertheless not entitled to an injunction.

A writ of injunction can be issued in a case of this kind only to prevent great and irreparable injury to the complaining party. The purpose of such a writ is to protect him from an injury which he will sustain because of the competition of the other party, who has agreed by his contract not to enter into such competition. In this case, said the court, the record does not show even that Melrose is engaged in the practice of medicine, or intends to engage in the practice of medicine, in Carbon county, during the period stated in the contract. The court, therefore, cannot say that Low is competing with him, and if there is no competition there can be no irreparable injury. Furthermore, even assuming that Melrose and Low are striving at the same time for medical practice in the same community, it is possible that Melrose is not being injured by Low's competition. Whether or not competition is injurious depends on a great many facts and circumstances, such as the relative standing of the parties in their profession and in public esteem,

their skill and ability as physicians, the time during which they have engaged in practice in the particular locality and elsewhere, and the amount of business to be obtained in the locality, none of which facts and circumstances are mentioned in the present case. The court ought to be informed concerning the facts and circumstances that make it appear that injunctive relief is necessary to protect the complainant from irreparable injury. Since such information has not been given in this case, the Supreme Court held that the case was not one requiring the issue of an injunction, and the judgment of the trial court in favor of Low was affirmed.—*Melrose v. Low* (Utah) 15 P (2d) 319.

**Workmen's Compensation Acts Aggravation of Pre-existing Arthritis by Accident Compensable**—The fact that an employee is suffering from a disease condition does not necessarily bar him from the right to compensation in case of injury and disability. An award may be had for disability caused by an injury arising out of and in the course of employment, if the injury accelerates or aggravates an existing disease. The award in favor of the workman whose arthritis was aggravated by accidental trauma was accordingly affirmed.—*Oklahoma Gas and Electric Company v. Slocum* (Okla.), 15 P (2d) 29.

**Workmen's Compensation Acts Injury by Wood Alcohol Fumes Compensable**—A painter who sprays automobiles with wood alcohol in a small, poorly ventilated room and as a result, in the ordinary course of his employment and without a fortuitous event intervening suffers a disabling illness, is disabled, not by an occupational disease, but by an accidental personal injury and under the Oklahoma workmen's compensation act is entitled to compensation.—*Quality Milk Products v. Lunde* (Okla.), 15 P (2d) 58.

## Society Proceedings

### COMING MEETINGS

- American Medical Association Milwaukee June 12-16 Dr. Olin West  
535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Chicago June 12-13 Dr. Clifford G.  
Grulee 636 Church Street Evanston Ill. Secretary
- American Association of Medical Milk Commissioners Milwaukee June  
12-13 Dr. Harris Moak 360 Park Place Brooklyn Secretary
- American Dermatological Association Chicago June 8-10 Dr. W. H.  
Guy 500 Penn Avenue Pittsburgh Secretary
- American Federation of Organizations for the Hard of Hearing Chicago  
June 18-22 Miss Betty C. Wright 1601 35th Street N.W. Washing-  
ton D. C. Secretary
- American Heart Association Milwaukee June 13 Dr. Irl C. Riggan  
450 Seventh Avenue New York Executive Secretary
- American Laryngological Rhinological and Otolological Society Chicago  
June 8-10 Dr. Robert L. Loughran 33 East 63d Street New York,  
Secretary
- American Proctologic Society Chicago June 12-13 Dr. Frank G.  
Runyon 1361 Perkiomen Avenue Reading Pa. Secretary
- American Society of Clinical Pathologists Milwaukee June 9-12 Dr.  
A. S. Giordano 531 North Main Street South Bend Ind. Secretary
- American Therapeutic Society Milwaukee June 9-10 Dr. Oscar B.  
Hunter 1801 Eye Street N.W. Washington D. C. Secretary
- American Urological Association Chicago June 20-22 Dr. Gilbert J.  
Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Association for Research in Ophthalmology Milwaukee June 13 Dr.  
Conrad Berens 35 East 70th Street New York, Secretary
- Association for the Study of Allergy, Milwaukee June 12-13 Dr. Warren  
T. Vaughan 808 Professional Building Richmond Va. Secretary
- Association for the Study of Internal Secretions Milwaukee June 12-13  
Dr. F. M. Pottenger 1930 Wilshire Boulevard Los Angeles Secretary
- Conference of State and Provincial Health Authorities Washington D. C.  
June 5-6 Dr. A. J. Chesley State Department of Health St. Paul
- Maine Medical Association Poland Spring June 26-28 Dr. Philip W.  
Davis 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Boston June 5-7 Dr. Walter L. Burrage  
182 Walnut Street Brookline Secretary
- Medical Library Association Chicago June 19-21 Miss Marjorie J.  
Darrach 645 Mullett Street Detroit Secretary
- Medical Women's National Association Milwaukee June 11-12 Dr. Inez  
A. Bentley 45 Gramercy Park New York, Secretary
- Montana Medical Association of Anaconda, July 12-13 Dr. E. G.  
Balsam Box 88 Billings Secretary
- National Tuberculosis Association Toronto Canada June 26-30 Dr.  
Charles J. Hatfield Seventh and Lombard Streets Philadelphia,  
Secretary
- New Jersey, Medical Society of Atlantic City June 6-9 Dr. J. B.  
Morrison 66 Milford Avenue Newark Secretary
- Pacific Coast Oto-Ophthalmological Society San Francisco, June 28-30  
Dr. F. C. Cordes Fitzhugh Building San Francisco, Secretary

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be applied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

#### Alabama Medical Association Journal, Montgomery

2 297-336 (Feb.) 1933

Some of the Problems Confronting Organized Medicine in Alabama.

S Kirkpatrick Selma—p 297

Congenital Hypertrophic Pyloric Stenosis. W R Vecker Mobile.—p 300

Relation of Roentgenology to Other Branches of Medicine. K F Kesmodel Birmingham—p 306

Typhoid Carriers. Observations of Their Distribution. L. C Havens Montgomery—p 309

Electrocoagulation of Tonsils. A B Harris Birmingham—p 313

\*Cultivating the Child's Appetite. A C Gipson, Gadsden—p 314

Epithelioma of the Face. C O King Birmingham—p 318

**Cultivating the Child's Appetite**—Gipson points out that, since hunger is the natural stimulus under which appetite develops it follows that all things which tend to vary the sensation of hunger may have a corresponding influence on appetite. Therefore methods for insuring early and complete emptying of the stomach so that hunger may be felt at the proper time should be instituted. In this regard it is important to avoid eating too much of foods that tend to remain too long in the stomach. Foods rich in fat pass out of the stomach slowly. All fried foods and nuts have this effect and this is the principal physiologic reason for withholding them from a child's dietary. Milk is one of the foods most slowly to be passed out of the stomach. Since milk delays stomach emptying and interferes with the hunger mechanism which one is anxious to stimulate, the advantage of pouring milk into unwilling eaters should be questioned. A long interval should always intervene between meals. It is usually considered that five hours is the best interval between meals of a child more than 18 months of age. The midmorning glass of milk so often given is a bad thing for a child with a poor appetite. Excessive amounts of sweets and starchy foods tend to destroy the appetite. Proteins especially meats, are supposed to stimulate appetite. Broths and meat extracts particularly seem to possess this faculty and are therefore used in the first part of the meal. Carlson has demonstrated that tonics containing bitters have no effect on hunger. Their use in children is disappointing. Treatment of the first attack of anorexia is an important part of the prevention of habitual poor appetite and is almost always necessary during the child's first year. On the first attack of refusal of food the amount should be reduced instead of increased to allow the child time to develop hunger which will stimulate appetite. No child should be forced to eat.

#### American Heart Journal, St. Louis

8: 297-440 (Feb.) 1933

\*Mechanism of Production of Short PR Intervals and Prolonged QRS Complexes in Patients with Presumably Undamaged Hearts. Hypothesis of Accessory Pathway of Auriculoventricular Conduction (Bundle of Kent). C C Wolfarth and F C Wood Philadelphia—p 297

Coronary Embolism. O Saphir Chicago—p 312

\*Observations on Arterial Blood Pressure During Attacks of Angina Pectoris. S A Levine and A C Ernestine Boston—p 323

\*Occurrence of Heart Block in Coronary Artery Thrombosis. D Ball New York—p 327

Effect of Tonsillectomy on Occurrence and Course of Acute Polyarthritides. Analysis of Six Hundred and Fifty Four Consecutive Case Histories. M Finland and W H Robey Boston and H Heimann Brooklyn—p 343

\*Arrhythmia of Heart Associated with Cheyne Stokes Breathing. Report of Case Showing Auriculoventricular Block. J M Steele and A J Anthony New York—p 357

\*Electrocardiographic Changes Following Ligation of Small Branches of Coronary Arteries. W M Fowler H W Rathe and F M Smith Iowa City—p 370

Studies in Oscillometric Pressure. H R Miller and W Chester New York—p 388

\*Combined Effect of Ephedrine and Atropine on Complete Heart Block. S N Cheer C L Tung and C W Bien Peiping China—p 400

Clinical Study of Respiratory Variations in Form of Electrocardiogram. L W Woodruff Joliet Ill—p 412

Multiple Rupture of Heart by Indirect Trauma Complicated by Mural Thrombosis and Embolism. O Swineford Jr University Va—p 418

Rupture of Splenic Infarct in Subacute Bacterial Endocarditis. A C Kerkhof and E A Gierc Minneapolis—p 423

**Short PR Intervals and Prolonged QRS Complexes**—Wolfarth and Wood believe that, in about 1 out of 1000 electrocardiograms, a case may be encountered that exhibits an abnormally short PR interval associated with a widened QRS complex, markedly aberrant in its initial portion. It is necessary to recognize that this type of tracing may occur in the absence of acquired cardiac damage. Many of these patients are subject to paroxysms of tachycardia and auricular fibrillation. An analysis of the tracings of these cases reveals that their characteristics cannot be explained by the hypothesis that they are due either to bundle-branch block (Wolff, Parkinson and White), or to "paraseptal rhythm" (Pezzi). The abnormal mechanism consists not of a delay or block but of an actual acceleration of the passage of the impulse from the auricle to a section of the ventricle. All the data so far obtained are in keeping with the possibility that an accessory pathway of auriculoventricular conduction (such as that described by Kent, between right auricle and right ventricle) could be responsible for the phenomena manifested by these cases.

**Blood Pressure During Attacks of Angina Pectoris**—Levine and Ernestine obtained blood pressure readings during spontaneous attacks of angina pectoris in twenty-three patients. In seven, the previous blood pressure readings were known. In three, the attacks were allowed to end spontaneously, and in twenty, relief was obtained by administering glyceryl trinitrate. In every instance the level of the systolic pressure was distinctly higher during pain than when the patient was free from pain. Although this may not be an invariable relationship this study and a survey of the cases recently reported lead one to the conclusion that a failure of the blood pressure to rise in anginal attacks is rare. The authors present evidence to show that in patients with angina pectoris pain alone, e g that of renal colic, does not produce an elevation in blood pressure or bring on an attack of angina. Although they suspect that a temporary elevation in blood pressure is an important factor in the production of anginal attacks and may even be a necessary immediate cause of the attack a final decision as to this relationship will require further investigation.

**Heart Block in Coronary Artery Thrombosis**—Ball describes a case of transient complete heart block occurring during an attack of acute coronary artery thrombosis. Changes in the ventricular portion of serial electrocardiograms conform to type T<sub>2</sub>, indicating myocardial damage as the result of occlusion of the right coronary artery. The transient nature of auriculoventricular dissociation during an attack of thrombosis of the coronary artery has been explained on the basis of the peculiar anatomy of the blood supply to the auriculoventricular node. Permanent heart block without any demonstrable lesions of the node or main stem may be explained on the same basis. The observations in the case presented and a review of similar cases reported in the literature indicate that in patients with occlusion of the coronary artery and complete heart block, the right coronary artery is involved in approximately 93 per cent and the left in 7 per cent. The presence of complete auriculoventricular dissociation is therefore believed to be a valuable diagnostic criterion in the clinical differentiation between right and left coronary artery thrombosis.

**Arrhythmia of Heart with Cheyne-Stokes Breathing**—Steele and Anthony report a case of heart failure exhibiting Cheyne-Stokes respiration in which various types of cardiac arrhythmia were recurrently manifested during the dyspneic phases of the respiratory cycle. Sinus slowing, prolongation of the PR interval, partial and complete heart block, and, during suppression of the formation of sinus impulses, idiopathic ventricular rhythms were observed. All of these changes in rhythm have previously been found to follow various degrees of vagal stimulation. With the exception of sinus slowing, all the phenomena occurred only after administration of digitalis in effective therapeutic doses. The authors suggest that, since digitalis has usually been administered in cases of Cheyne-

Stokes breathing in which such disturbances of rhythm appeared during the dyspneic phase the vagal effect of this drug is a powerful adjunct in their production

**Electrocardiogram Following Ligation of Arteries**—In Fowler and his associates investigation, the occlusion of small branches of both the right and left coronary arteries and also the opening of the pericardium without the closure of a vessel produced successive changes in the T wave of the electrocardiogram. In each instance the alteration in the T deflection was associated with a lesion of the myocardium. They believe that electrocardiographic changes of this character are indicative of a myocardial lesion and feel that these observations may be helpful in the diagnosis of occlusion of the smaller branches of the coronary arteries in man

**Effect of Ephedrine and Atropine on Heart Block.**—Cheer and his associates studied the reactions of two cases of complete heart block to ephedrine. With a small dose of ephedrine, one patient showed practically no change in the auricular or ventricular rate but a moderate elevation of the blood pressure. In the other there was an increase of the auricular rate but practically no change in the ventricular rate or blood pressure. With a large dose of ephedrine one patient showed an increase of the auricular and ventricular rate and a marked elevation of the blood pressure. The ventricular complexes varied and there were frequent ventricular extrasystoles. In the other patient there was a decrease in the auricular rate while the ventricular rate remained constant. There was practically no pressor response and no change in the electrocardiograms. In instances in which slowing of the auricles occurred without any appreciable elevation of blood pressure the slowing may be ascribed to the stimulating effect of ephedrine on the parasympathetic nerves. When an effective dose of atropine was administered to an ephedrinized patient with complete heart block a marked increase of auricular rate and a slight elevation of ventricular rate with a marked elevation of the blood pressure and an increase of the pulse pressure occurred. This action of ephedrine in combination with atropine suggests that atropine neutralizes the parasympathetic effect that results either from the individual's vagotony or from the stimulating effect of ephedrine on the parasympathetic nerves. Atropine hastened and intensified the pressor effect of ephedrine but shortened its duration and abolished the depressor reflex effect of high blood pressure on the auricular rate. No corresponding effect was noticed when atropine was combined with pseudo-ephedrine. Ephedrine and ephedrine in combination with atropine did not abolish the complete block

left vagal stimulation apparently removed rather than caused such block. The underlying functional disturbance in this case was apparently fatigue of one of the bundle branches, which was sufficiently relieved by increased vagal slowing to permit normal bundle-branch conduction. Abnormal QRS complexes occurred after as long a rest as 0.56 second, and normal complexes were restored by additional rest of 0.08 second.

**Treatment of Primary Dysmenorrhea**—The treatment of primary dysmenorrhea, still a baffling problem in gynecology, has been rendered difficult because of our ignorance of the factors concerned in its etiology. Novak discusses the constitutional and psychogenic factors that appear to be of prime importance in many cases. Evidence has been brought forward, chiefly from recent physiologic investigations to indicate that the immediate cause of the pain is an exaggerated contractility of the uterus manifested as pain if the pain threshold is lowered or if there is an actual imbalance between the two hormones that appear to regulate this contractility. These are folliculin the normal stimulant of uterine excitability, and progesterin the normal inhibitor. While one cannot of course, discuss these relationships in a precise or quantitative way, the clinical characteristics of primary dysmenorrhea on the one hand and physiologic studies, on the other, both indicate the importance of this hormonal factor in the production of the pain. The treatment of the attack itself, aside from such customary measures as rest, hot applications and analgesics, may rationally include the administration of antispasmodics, such as atropine. Even more intelligent would seem the administration of biologic uterine antispasmodics the one suggesting itself being the luteinizing principle obtained from the urine of pregnant women. This substance readily available has been shown to be like progesterin, a powerful inhibitor of the rhythmic contractility of the uterine muscle.

**Treatment of Chronic Peptic Ulcer with Gastric Mucin.**—Bloch and Rosenberg relate their experiences with gastric mucin in the treatment of peptic ulcer and point out the advantages and disadvantages over the present orthodox method. From their observations they think that gastric mucin probably acts not through its acid combining power but by virtue of its demulcent effect. Their experience with thirty mucin treated patients, as compared with fifteen ulcer patients receiving other forms of treatment shows that some will not continue its use because of the disagreeable taste and certain untoward symptoms. In others, prolonged administration effects no relief whereas other forms of treatment are successful, such as a diet consisting of pureed fruits and vegetables and other well comminuted foods. In still others relief is temporary and followed by a relapse. In the remainder, relief occurs with mucin when other forms of therapy fail. Further refinements in its manufacture may widen its scope of usefulness in the treatment of peptic ulcer.

## American Journal of Medical Sciences, Philadelphia

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- Mercury Poisoning J P Peters Anna J Eisenman and D M Kydd New Haven Conn.—p 149  
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What Happens Eventually to Patients with Hyperthyroidism and Significant Heart Disease Following Subtotal Thyroidectomy? H H Rosenblum and S A Levine Boston.—p 219  
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\*Treatment of Primary Dysmenorrhea with Especial Reference to Organotherapy E Novak Baltimore.—p 237  
Defective Color Vision and Its Handicaps in Medicine. L M Tocantins and H W Jones Philadelphia.—p 243  
Annular Pancreas Compilation of Forty Cases and Report of New Case J B McNaught San Francisco.—p 249  
\*Some Limitations in Treatment of Chronic Peptic Ulcer with Gastric Mucin. L Bloch and D H Rosenberg Chicago.—p 260

**Functional Bundle-Branch Block.**—Sigler believes that bundle-branch block complete and partial, may be functional in origin caused predominantly by vagal inhibition and fatigue. Restoration of normal QRS complexes in such cases may be accomplished by the removal of vagus inhibition when vagal effect is the underlying cause, and by local rest when fatigue is the cause. The author reports a paradoxical case in which

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- Some Phases of Liver and Gallbladder Function Observations in Man on Elimination of Methylene Blue. D R Mills and Béla Halpert New Haven Conn.—p 265  
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- Principle of Autonomic Nervous Action Observations on Resistance to Temperature of Endings of Vagus and Sympathetic in Heart. A. L. Fryer and E. Gellhorn. Chicago.—p. 392
- Relative Importance of Performance of Work and Initial Fiber Length in Determining Magnitude of Energy Liberation in Heart G. Decherd and M. B. Visscher. Chicago.—p. 400
- Effect of Experimental Massive Hemorrhages on Size of Red Blood Cell in Dogs. A. R. Camero and E. B. Krumbhaar. Philadelphia.—p. 407
- Rhythmic Arterial Expansion as Factor in Control of Heart Rate F. D. McCrea and C. J. Wiggers. Cleveland.—p. 417
- Poiseuille's Law and Capillary Circulation. E. M. Landis. Copenhagen. Denmark.—p. 432
- Effect of Alternating Electrical Currents on Heart. D. R. Hooker, W. B. Kouwenhoven and O. R. Langworthy. Baltimore.—p. 444
- Comparison of Calcium Content of Human Cerebrospinal Fluid with that of Ultrafiltrate of Serum. Olive M. Searle and J. J. Michaels. Ann Arbor. Mich.—p. 455
- Study of Vitamin A Deficiency in Normal and Depancreatized Dogs. Elaine P. Ralli, A. Iariente, G. Flaum and Alice Waterhouse. New York.—p. 458
- Nutritive Deficiency of Milk with Specific Reference to Manganese Energy and Pituitary Relations. Evelyn C. Van Donk, H. Steenbock and E. B. Hart. Madison. Wis.—p. 468
- Is Effect of Fluorine on Teeth Produced Through Parathyroid Glands? Hazel M. Hauck, H. Steenbock and Helen T. Parsons. Madison. Wis.—p. 480
- Effect of Level of Calcium Intake on Calcification of Bones and Teeth During Fluorine Toxicosis. Hazel M. Hauck, H. Steenbock and Helen T. Parsons. Madison. Wis.—p. 489
- Adrenalectomy in the Rat. R. Gaunt. Princeton. N. J.—p. 494
- Alleged Interrelationship of Adrenal Cortical Hormone and Gonads. R. Gaunt and W. M. Parkins. Princeton. N. J.—p. 511

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- Roentgen Ray Evaluation of Breast Symptoms. I. H. Lockwood. Kansas City. Mo.—p. 145
- \*Accessory Articular Process of Lumbar Vertebrae and Its Differentiation from Fracture. R. A. Rendich and S. W. Westing. Brooklyn.—p. 156
- Meliorheostosis Leri. Review of Literature and Report of Cases. J. J. Moore and A. A. de Lorimier. Washington. D. C.—p. 161
- Differential Diagnosis of Diseases of Liver and Spleen by Aid of Roentgenography After Intravenous Injection of Thorotrast (Thorium Dioxide Solution). W. M. Yater and L. S. Otell. Washington. D. C.—p. 172
- Some Evidences of Intracranial Disease as Revealed by Roentgen Ray. C. W. Schwartz. New York.—p. 182
- \*Roentgenologic Skull Changes in Anemias of Childhood. Report of Case. Few Notes on Similar Findings Among Skulls of Peruvian Indians. B. F. Feingold. Los Angeles and J. T. Case. Chicago.—p. 194
- Tuberculous Pericarditis. Its Roentgenologic Significance. K. Kornblum, S. Bellet and H. W. Ostrum. Philadelphia.—p. 203
- Varieties of Fusospirochetal Disease of the Lung. W. G. Herrman and F. J. Altschul. Ashbury Park. N. J.—p. 214
- Radical Treatment of Carcinoma of Lip. V. P. Blair, J. B. Brown and W. G. Hamm. St. Louis.—p. 229
- \*Care of Cervical Glands in Intra-Oral Carcinoma. C. B. Stewart. Atlanta. Ga.—p. 234
- \*Surgical Treatment of Metastases to Cervical Lymph Nodes from Intra-Oral Cancer. E. Fischel. St. Louis.—p. 237
- \*Conservative Procedure in Care of Cervical Lymph Nodes in Intra-Oral Carcinoma. J. J. Duffy. New York.—p. 241

**Lumbar Vertebrae**—Rendich and Westing present roentgenograms of five patients who had a fissure within certain of the lower articular processes of the lumbar vertebrae. This fissure about 0.5 mm wide extends transversely and completely through the process at a level approximately 1 cm above the tip. The borders of the bones entering into this formation are regular, well defined and of cortical density. The authors furnish limited data concerning sex, age, occupation, history and clinical observations of their patients. Two patients had accidents just prior to the examination, the other three failed to give any history of old or recent trauma. In endeavoring to explain their roentgenographic observations in the five patients, they consider four possible causes: recent fracture, old fracture with ununited fragments, ununited epiphysis and accessory bone. The classification of this separate bone particle as an accessory ossicle appears most logical. Such supernumerary ossicles articulating with and actually replacing part of a major bone are not infrequently observed elsewhere in the skeleton. As an example may be mentioned the os trigonum representing the posterior lip of the astragalus. It is their opinion that the

condition is another member of the family of accessory ossicles. For these reasons they suggest the name accessory articular process (processus accessorius articularis).

**Skull Changes in Anemias of Childhood**—Feingold and Case state that erythroblastic anemia is characterized by definite bone changes. The skull changes in erythroblastic anemia are quite typical. The thin or absent outer table, the thin inner table and the thickened diploe which presents a striated appearance, offer a striking picture. The long bones also show pronounced changes in erythroblastic anemia, as do other bones of the skeleton. Skull changes similar to those reported for erythroblastic anemia have been observed in cases of sickle cell anemia. No definite conclusions can be drawn from the literature regarding changes in the long bones in sickle cell anemia. The authors present the case of a Negro child having skull changes identical with those described for both erythroblastic and sickle cell anemia, but no changes in the long bones were observed. The blood picture showed no normoblasts. Sickle cells were not demonstrated. The skull changes described are indicative of a hemolytic process but are not pathognomonic for either erythroblastic anemia or sickle cell anemia. The occurrence of "turmschädel," or "tower skull," has been frequently described in cases of hemolytic icterus. In tower skull the cranial tables are not involved. The characteristic deformity results primarily from a hypoplasia of the base and secondarily from premature synostoses. Tower skull is not pathognomonic for hemolytic icterus but its high incidence in this condition should make it a valuable adjunct in the diagnosis of this disease.

**Cervical Glands in Intra-Oral Carcinoma**—Stewart presents a review of 257 cases of intra-oral cancer treated from 1924 to 1930 at the Steiner clinic, excluding the lip cases, 41.3 per cent presented nodes on admission. Of the 189 cases treated prophylactically, nodes developed in 31, or 16.4 per cent. Of the cases treated surgically and radiologically, 70 per cent of the lip metastases were controlled. The combined results of the cancer lesions located in the mucosa of the cheek, tongue, tonsil, alveolus and floor of the mouth show that only 11.3 per cent were controlled. The cases considered beyond the help of surgery were treated exclusively by radiation. Of these many were palliated but none controlled. The author concludes that metastasis from intra-oral carcinoma is usually to the neck and proves fatal. There is no completely satisfactory therapy, therefore all worthwhile agencies not incompatible with the life of the host must be employed. Surgery alone will give some five-year cures. Irradiation (including interstitial) alone will give a few five-year cures. The correct combination of surgery and irradiation should give better results than either alone. All workers should report their method of treatment and results so that patients may have the benefit of the best therapy.

**Intra-Oral Cancer**—The material for Fischel's study comprises 190 cases from the Barnard Free Skin and Cancer Hospital and 50 private cases. Every patient had more or less radical resection of the lymph nodes of the neck as part of the treatment of some form of intra-oral carcinoma, including carcinoma of the lower lip in the hospital group. In many instances resection of the lymph nodes was combined with an intra-oral operation. In this group the operative mortality was from 20 to 25 per cent. The percentage of deaths from radical resection of the glands of the neck alone was approximately 4 per cent. From a five-year cure standpoint, analysis of both private cases and free clinic cases showed a striking difference in the number of patients alive when no carcinoma was found microscopically in the excised lymph nodes. Of the 30 clinic patients without carcinoma in the glands 19 survived for five years. Of 32 patients with carcinoma of the glands, 8 were alive five years later. These are exclusive of lip patients. Of 66 lip patients 38 of 40 without carcinoma survived, of 16 with carcinoma 9 survived. These figures are based on records that are complete and patients who died as a result of operation are excluded. The significant facts are that the percentage of patients alive five years on whom neck dissections were done before the glands were involved is much greater than that of the patients in whom the glands showed carcinoma, and that of 48 patients in whom carcinoma was demonstrated as having formed metastases in the cervical lymph nodes, 17, or 35 per cent were alive without recurrence five

years later. These results cannot be approximated in the case of proved metastases to lymph nodes by any form of treatment other than radical surgery.

**Intra-Oral Carcinoma**—Duffy draws the following conclusions from a study of 1,363 patients with intra-oral carcinoma, of whom 70 per cent were admitted to the hospital without palpable nodes, 175 had operable nodes and 205 patients presented inoperable nodes. A large proportion of the cases presenting intra-oral carcinoma are admitted to the hospital without metastases to the cervical lymph nodes. A few patients admitted without cervical lymphatic metastases develop metastases in that region. The patients without cervical metastases, and those with inoperable metastases, constitute most of the cases admitted to the hospital. Palpable nodes in the cervical region are often hyperplastic nodes. Differential diagnosis is difficult. Errors in diagnosis are more apt to be made in diagnosing hyperplastic nodes as metastatic, rather than metastatic nodes as hyperplastic. Operability of the cervical nodes is determined not only by the stage of the metastases but also by the grade of the malignant condition of the primary lesion. Conservatism is maintained at the Memorial Hospital in the care of patients without cervical lymphatic metastases, and the field of operable nodes is being narrowed as experience is gained in the use of gold tubes in the advanced and borderline cases of cervical metastases from intra-oral carcinoma.

### Archives of Dermatology and Syphilology, Chicago

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- \*Comparison of Neoarsphenamine and Arsphenamine. Results and Reactions in Nine Hundred and Ninety Nine Patients Under Treatment or Observation not Less than Six Months. J. P. Thornley. New York—p. 185.
- \*Hyperglycemia in Diseases of Skin. E. B. Tauber. Cincinnati—p. 198.
- Intradermal and Cutaneous Methods of Testing in Food Allergy. Comparative Study. J. T. Belgrade. Wheeling, W. Va.—p. 206.
- Nocardiosis Cutis Gangrenosa. W. H. Guy and T. R. Helmbold. Pittsburgh—p. 224.
- Mycosis Fungoides in Mother and Daughter. O. J. Cameron. Ann Arbor, Mich.—p. 232.
- Subcutaneous Fat Necrosis of the New Born. Report of Five Cases. H. Fox. New York—p. 237.
- \*Exfoliative Dermatitis and Malignant Erythroderma. Value and Limitations of Histopathologic Studies. H. Montgomery. Rochester, Minn.—p. 253.
- Trichostasis Spinulosa. S. J. Fanburg. Newark, N. J.—p. 274.
- Basal Cell Epitheliomas with Excessive Pigment Formation. Their Relation to Melanomas. J. J. Eller. New York, and N. P. Anderson. Los Angeles—p. 277.
- Cutaneous Hypersensitivity to Mercury from Tattooing. Report of Case. D. B. Ballin. New York—p. 292.
- Systemic Phase of Tuberculosis Cutis. E. Tauber and L. Goldman. Cincinnati—p. 295.
- Acne Conglobata. Experimental Study. G. H. Belote. Ann Arbor, Mich.—p. 302.
- Sensitization and Desensitization in Man with Snake Venom (Ancistrodon Piscivorus). S. M. Peck. New York—p. 312.
- Urinary Proteose in Dermatoses. F. J. Eichenlaub. Washington, D. C.—p. 316.

**Comparison of Neoarsphenamine and Arsphenamine**—Thornley presents a statistical study of 999 syphilitic patients who received neoarsphenamine or arsphenamine and states that the difference in the efficacy of neoarsphenamine and arsphenamine is not great when neoarsphenamine is given well diluted in moderate dosage, and by the gravity method. The reactions are so much less by the gravity method that this fact should more than counterbalance the convenience of the syringe method. Considering the high number of reactions reported by other clinics and by physicians in private practice in which neoarsphenamine is given by the syringe method, against the incidence of 9 per cent noted with the gravity method, all the advantages that have been claimed for neoarsphenamine because of the possibility of giving it with a syringe are absolutely nullified. Neoarsphenamine given with a syringe will cause complications. On the other hand if it is given well diluted and by the gravity method, the results will be nearly as good as those obtained with arsphenamine and there will be fewer complications.

**Hyperglycemia in Diseases of Skin**—Tauber made a study of determinations of the blood sugar in more than 1,500 persons and of blood sugar tolerance tests in about half that number. The total series consisted of 514 diabetic patients, 504 patients suffering from a variety of causes and 511 dermatologic cases. His observations were contrary to the statements made

in the literature that common disorders of the skin are associated with hyperglycemia, as he found, almost without exception, that the blood sugar is normal and that in furunculosis the reverse of hyperglycemia is the rule and the fact. That certain groups of cutaneous diseases are connected regularly with hyperglycemia is doubtful. He believes that dextrose given intravenously, combined with a high carbohydrate diet, is almost a specific in the cure of furunculosis.

**Exfoliative Dermatitis and Malignant Erythroderma**—Montgomery's study of seventy-three cases of exfoliative dermatitis and sixteen cases of generalized erythroderma includes cases of exfoliative dermatitis of the primary or idiopathic type (Wilson) and cases secondary to various types of dermatosis, such as psoriasis, eczema, seborrheic dermatitis and lichen planus. He states that the histopathologic picture in erythroderma psoriaticum is diagnostic or at least suggestive of psoriasis in most cases, provided a suitable site for biopsy is chosen. Exfoliative dermatitis secondary to other benign conditions can usually be distinguished from psoriasis and from lymphoblastoma. About 25 per cent of the cases of exfoliative dermatitis proved, on microscopic examination to belong in the group of lymphoblastomas. The type of etiologic factors concerned in exfoliative dermatitis cannot be diagnosed on the basis of objective examination only. It is often necessary to use all the means at one's disposal, including biopsy of the skin and lymph nodes, roentgen rays, studies of the blood and prolonged periods of observation, in order to arrive at the correct diagnosis. Mycosis fungoides may start as exfoliative dermatitis, only later to assume its more common clinical appearance. In several cases of exfoliation or universal malignant erythroderma, primary specific changes of one of the types of lymphoblastoma were found in the skin before such changes were seen either at biopsy of a lymph node or in the course of studies of the blood. The histopathologic report that an excised lymph node presents merely an inflammatory reaction does not rule out the possibility that the exfoliative dermatitis may be of lymphoblastomatous etiology. Although the cutaneous histopathologic picture in exfoliative dermatitis and malignant erythroderma may present the features of lymphoblastoma, in more than half of the cases it is impossible definitely to specify which type of lymphoblastoma will eventually develop. In a few cases the cutaneous manifestations cleared up, only to return in another form after a variable period or remission.

### Archives of Ophthalmology, Chicago

9 165 330 (Feb.) 1933

- \*Allergy and Immunity in Ocular Tuberculosis. J. S. Friedenwald. Baltimore—p. 165.
- Dark Adaptation in Albinotic Eye. Dorothy J. Shadd. Boston—p. 179.
- Intracapsular Extraction at German Eye Clinic (Elschnig) in Prague. W. F. King. Buffalo—p. 191.
- Uveal Pigment. Hypersensitivity and Therapeutics. A. C. Woods and M. F. Little. Baltimore—p. 200.
- Effect of Reaction on Ophthalmic Solutions. S. R. Gifford and R. D. Smith. Chicago—p. 227.
- \*Ocular Syphilis. III. Review of Literature and Report of Case of Acute Syphilitic Meningitis and Meningo-Encephalitis with Especial Reference to Papilledema. R. L. Drake. Philadelphia—p. 234.
- New Conception of Dioptric Power. J. I. Pascal. Boston—p. 244.
- Metastatic Sarcoma of Choroid. Report of Case. W. E. Fry. Philadelphia—p. 248.

**Ocular Tuberculosis**—According to Friedenwald's experiments, practically complete desensitization of tuberculous guinea-pigs can be achieved by daily injections of massive doses of tuberculin. Guinea-pigs immunized to tuberculosis and sensitized to tuberculin by inoculation with an avirulent strain of tubercle bacilli, and subsequently desensitized to tuberculin show no diminution in their resistance to reinfection as tested by the mortality of the disease, the spread of the infection or the progress of the local lesion. In all these respects, the desensitized animals showed more resistance to reinfection than did nondesensitized controls. Allergy in tuberculosis cannot be regarded as essential to immunity. The rationale for the use of tuberculin in treating tuberculous infection is therefore the production of perifocal desensitization rather than perifocal allergic reactions. When sufficient numbers of tubercle bacilli are injected into the anterior chambers of guinea-pigs immune to tuberculosis and allergic to tuberculin, an acute fibrinous iridocyclitis is produced which usually subsides in from two to four days. This reaction is analogous to the Koch reaction in

the skin. The clinical picture of tuberculous kerato-iritis as seen in human beings can be reproduced in guinea-pigs by the inoculation of living tubercle bacilli into the anterior chambers of animals previously immunized by subcutaneous injection of avirulent organisms. Similar inoculation of nonimmune animals produces a rapidly caseating lesion unlike anything seen clinically in human beings. Partial desensitization of guinea-pigs allergic to tuberculin can be achieved by daily massive injections of sterile glycerin broth.

**Ocular Syphilis**—Drake points out that acute syphilitic meningitis and meningo-encephalitis are relatively rare but their presence should be considered in any patient presenting signs of meningeal involvement. Papilledema is an important clinical sign in this disease and should be searched for in all cases. It was present in sixteen of the fifty cases reported in the literature. The degree of papilledema in these sixteen patients ranged from 2 to 5 diopters, and the swelling involved both optic nerves in fourteen cases. Papilledema in this disease responds to antisyphilitic treatment, in some cases, however, a postneuritic atrophy remains. Contrary to the opinion of many observers, this disease process often develops in those cases in which there has been no previous antisyphilitic therapy. Previous insufficient antisyphilitic therapy, especially arsphenamine, therefore, is not necessary for the development of acute syphilitic meningitis. Headache, cervical rigidity and paralysis of the cranial nerves were the most prominent symptoms. Acute syphilitic meningitis and meningo-encephalitis respond well to early and intense antisyphilitic therapy. Of the fifty cases reviewed from the literature, forty occurred in male patients. The average age was 27.2 years, the youngest patient's age was 1 year and the eldest 49 years. The mortality was 22.2 per cent.

### Archives of Surgery Chicago

26: 169-344 (Feb.) 1933

- Acute Osteomyelitis of Vertebrae. H. M. Klein. New York—p. 169.  
\*Spontaneous Nontraumatic Perirenal and Renal Hematomas. Experimental and Clinical Study. H. J. Polkey and W. J. Vynalek. Chicago—p. 196.  
Transplantation of Intact Mammalian Heart. F. C. Mann and J. T. Priestley. Rochester. Minn. J. Markowitz and W. M. Yater. Washington. D. C.—p. 219.  
Bacteriology of Pulmonary Abscess. M. S. Marshall and H. Brunn. San Francisco—p. 225.  
Gastric Secretion. III. Increased Acid Secretion in a Transplanted Gastric Pouch During Lactation. E. Klein. New York—p. 235.  
Id. IV. Effect of Atropine on Secretion of Transplanted Gastric Pouches. E. Klein. New York—p. 246.  
Ethiology of Calculi. III. Effect of Diet on Bile Salt Cholesterol Ratio. L. E. Dostal and E. Andrews. Chicago—p. 258.  
Healing of Fractures of Defects in Bone and of Defects in Cartilage After Sympathectomy. J. A. Key. St. Louis and R. M. Moore. Galveston. Texas—p. 272.  
Role of Infection in Production of Postoperative Adhesions. G. P. Muller and L. A. Rademaker. Philadelphia—p. 280.  
\*New Surgical Procedure for Acute Pancreatitis. Report of Six Cases. H. H. Haynes. Clarksburg. W. Va.—p. 288.  
\*Madura Foot. A Third Case of Monosporosis in a Native American. M. Gellman, Baltimore and J. A. Gammel. Cleveland—p. 295.  
Vasodilator Fibers. Peripheral Course as Revealed by a Roentgenographic Method. R. M. Moore, J. H. Williams and A. O. Singleton. Jr. Galveston. Texas—p. 308.  
\*Experimental Surgery of Pulmonic Valve. J. H. Powers. Cooperstown. N. Y. and M. A. Bowie. Philadelphia—p. 323.  
Loss of Protein from Blood Stream. Effects of Injection of Solution of Pituitary and of Epinephrine. A. Blalock, H. Wilson, B. M. Weinstein and J. W. Beard. Nashville. Tenn.—p. 330.  
Forty-Ninth Report of Progress in Orthopedic Surgery. J. G. Kahns, E. F. Cave, S. M. Roberts and J. S. Barr. Boston. J. A. Freiberg. Cincinnati. J. E. Milgram. New York. G. Perkins, London. England and P. D. Wilson. Boston—p. 335.

**Perirenal and Renal Hematomas**—Polkey and Vynalek present the 178 cases of renal hematomas collected from the literature and state that 76 per cent of their experiments on animals with ligation of the renal vein were positive for perirenal hematoma, and 100 per cent for parenchymal hemorrhage. Of the 178 assembled cases, almost 70 per cent showed renal and suprarenal disease associated with perirenal hematoma. The causative disease of the kidneys, suprarenal blood vessels and infections are all capable of sudden congestions of the organs and elevation of intrarenal tension. Spontaneous perirenal hematoma may often be the result of sudden congestion of a diseased organ. The authors report a case that was due to an extrarenal cause. Nephrectomy is the operation of choice in cases of renal bleeding. Spontaneous cases in which no

cause is discovered are probably explained by a sudden renal congestion, acting on some pathologic condition of the kidney or of the perirenal tissues. Even in the cases with a demonstrable cause, the mechanism of hemorrhage may be as suggested.

**Acute Pancreatitis**—Haynes describes an operation for drainage from the posterior surface of the pancreas, in which the main advantages of the procedure are that it affords (1) a better opportunity to palpate the gland thereby yielding a clearer conception of the pathologic changes and points where drainage is most essential (2) better drainage (more dependent drainage) (3) less hemorrhage (4) fewer postoperative adhesions, and (5) easier performance. None of the author's five cases of drainage from the posterior surface have presented any symptoms that could be attributed to lack of drainage. If drainage is the chief object of the operation it seems that this method has decided advantages over any other method that he has been able to find. In no case has it been necessary to clamp or ligate any bleeding points about the pancreas.

**Madura Foot**—Gellman and Gammel report a third case of monosporosis under the clinical picture of Madura foot of the white grain variety occurring in a native American. Mycetomas due to higher fungi rarely respond to medical treatment (iodides and compound tincture of iodine given intravenously), therefore they belong to the domain of surgery. In cases of chronic osteomyelitis and tuberculosis or syphilis of the bone, the possibility of a mycosis should be considered. Monosporium apiospermum injected into the knee joints of rabbits results in a purulent arthritis with periarthritic abscesses from which retrocultures are positive. This is the first instance in which experiments on animals carried out with a fungus isolated from a patient with maduromycosis in the United States yielded positive results.

**Surgery of Pulmonic Valve**—Powers and Bowie performed electrocoagulation of the pulmonic valve on six dogs and followed it with intravenous inoculation with cultures of *Streptococcus viridans*. Acute vegetative endocarditis developed on the traumatized valve. As these lesions healed the cusps of the valve became thickened, fibrous and inelastic; the edges tended to adhere to one another, and the end result was actual stenosis of the pulmonic orifice. Two of these animals with experimental pulmonic stenosis were subjected to partial resection of the stenosed valve. The operation was well tolerated, and the animals lived for twenty months without evidence of cardiac decompensation. The authors suggest that the condition, in certain selected patients with congenital pulmonic stenosis, may be amenable to surgical treatment.

### Florida Medical Association Journal, Jacksonville

19: 315-358 (Feb.) 1933

- Peptic Ulcer. J. A. Simpson. Jacksonville—p. 321.  
Transurethral Resection of the Prostate. L. Orr. Orlando—p. 325.  
Relation of Cancer Problem to Public Health. G. R. Holden, Jacksonville—p. 330.

### Georgia Medical Association Journal, Atlanta

22: 41-82 (Feb.) 1933

- Efficient Method of Traction for Fractures of Femur. C. H. Watt. Thomasville—p. 41.  
Cosmetic Dermatology. J. W. Jones and H. S. Alden. Atlanta—p. 45.  
Physician's Part in Public Health Program. J. A. Redfearn. Albany—p. 50.  
How Much Curative Medicine Should a Health Department Do to Put on an Adequate Health Program? C. L. Ridley. Macon—p. 52.  
Method of Precision in Diagnosis of Early Pregnancy (Aschheim-Zondek Test). H. F. Sharpley, Jr. Savannah—p. 59.  
\*Use of Digitalis in Pneumonia. H. B. Cason, Jr. Warrenton—p. 64.

**Use of Digitalis in Pneumonia**—Cason points out that of late the statistical evidence is against the routine use of digitalis in pneumonia. In the usual case the symptoms of heart failure are due primarily to toxemia and anoxemia and digitalis having no effect on these primary causes will be of no benefit in neutralizing their actions. A possible harmful effect may be due to stimulation of the vagus and cardio-inhibitory center. The use of digitalis in pneumonia should be confined to cases of auricular fibrillation and auricular flutter and to cases of decompensation or previous to decompensation, and then only after careful thought and consideration.

## Journal of Immunology, Baltimore

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- Studies on Cultures and Broth Filtrates of Staphylococci I. E. L. Burky, Baltimore—p. 93  
 Id. II E. L. Burky, Baltimore—p. 115  
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 Studies in Phagocytosis I. Effect of Endotoxin on Phagocytosis of Gonococci J. Wittenberg, M. Lederer and Mollie Mollov, Brooklyn—p. 135  
 Antigenic Property of Gelatin Diazo-Arsanilic Acid S. B. Hooker and W. C. Boyd, with assistance of O. E. Alley and M. A. Derow, Boston—p. 141  
 Relationship of Tuberculin Proteins of Different Acid Fast Bacilli to Sensitization as Indicated by Their Reactivity in Sensitized Animals Florence B. Seibert and Nelle Morley, Chicago—p. 149  
 Power of Normal Human Serums to Inactivate Virus of Poliomyelitis in Its Relation to Blood Grouping and to Exposure. C. W. Jungblut, New York—p. 157  
 Differentiation of Optically Isomeric and Related Cinchona Alkaloids by Quinine Sensitive Subjects W. T. Dawson, J. P. Sanders and L. M. Tomlinson, Galveston, Texas—p. 173

## Journal of Lab. and Clinical Medicine, St. Louis

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- \*Thyroid Gland Deficiency in Chronic Arthritis F. C. Hall and R. T. Monroe, Boston—p. 439  
 Chemical Changes in Blood of Dog in Experimental Acute Pancreatitis A. C. Clasen, T. G. Orr, P. N. Johnstone and Bernice Rice, Kansas City, Kan.—p. 457  
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**Thyroid Deficiency in Arthritis**—Hall and Monroe analyzed 300 patients with chronic nontuberculous arthritis in order to detect the signs and symptoms of thyroid deficiency, the basal metabolic rates, the action of thyroid therapy and the results of medical treatment, which included thyroid substance. Of these, 150 were of the atrophic type of arthritis and 150 were of the hypertrophic type. In the hypertrophic group of patients: 1 The symptoms and signs of hypothyroidism occurred with great frequency, with no other obvious explanation for them. 2 The basal metabolic rates were below minus 10 in 50 per cent and below minus 15 in 34.2 per cent of 108 patients, even though most of them were determined under inadequate conditions of rest and in the presence of pain. In forty-two patients no basal metabolic rate determinations were made. 3 They were for the most part well nourished persons and no other explanation for the hypometabolism was apparent except for the glandular deficiency. 4 Thyroid therapy was of permanent beneficial effect in 49.1 per cent of 116 patients in whom it seemed wise to use it. In the atrophic group of patients: 1 The symptoms and signs of hypothyroidism were encountered less frequently and generally would be accounted for on a basis of depletion and undernutrition. 2 The basal metabolic rates were below minus 10 in 35.6 per cent and below minus 15 in 17.7 per cent of 106 patients. No basal metabolic rate determinations were made in forty-four patients. 3 Definite glandular deficiency seemed present in only a small number, and there was usually another explanation for the hypo-

metabolism. 4 Thyroid therapy was of permanent beneficial effect in 16.5 per cent of 103 patients in whom it seemed wise to use it. The authors conclude that thyroid deficiency appears to be a contributing etiologic factor in certain patients with chronic arthritis, as well as infection, dietary deficiency, trauma and depletion. Its correction, when present, improves the general well being of the patient, aids in the relief of joint pain and disability, and helps to lay a foundation for permanent control of the arthritis, probably through better joint nutrition.

**Skin Capillaries and Vitamin C Standard**—Göthlin states that the strength of the skin capillaries can be systematically ascertained by the modifications he made in the clinical capillary test to transform it into a test of the strength of the capillaries satisfactory from the physical point of view. In performing the test the veins of the upper arm must be subjected to manometrically measured pressure, and in most cases more than one degree of pressure must be applied to make the determination. Each degree of pressure applied should be lower than the diastolic blood pressure in the brachial artery of the subject of examination. Otherwise the afflux of arterial blood is also partly obstructed. The skin area within which the observations are to be made should be definitely limited as to position, shape and size. In the author's method pressures of 35 and 50 mm. of mercury were selected. The skin area to be examined is circular, with a diameter of 60 mm., and its center coincides with the center of the hollow of the elbow. In order to obtain sufficient sensitiveness in this test it is necessary to maintain the pressure for fifteen minutes. In carrying out the test it proved advisable to fix limits between the various grades of strength in the following manner, according to a descending scale: grade I, no petechiae within the examined skin area at a pressure of 50 mm. of mercury in fifteen minutes; grade II, petechiae appear at a pressure of 50 mm. of mercury but their number does not exceed 6; grade III, more than 6 petechiae appear at 50 mm. of mercury but none or at most one at 35, and grade IV, at least 2 petechiae are present at a pressure of 35 mm. of mercury. The capillary strength, ascertained by this method, indirectly reveals the vitamin C standard of persons who are healthy or exhibit only such deviations from health as are in themselves due to a low vitamin C standard. The author suggests that with the same method it is probably also possible to estimate the individual vitamin C standard in cases of uncomplicated arteriosclerosis, afebrile tuberculosis, achylia and uncomplicated afebrile gastric ulcers. The method may be used as a test of the individual vitamin C standard by physicians, hygienists and dentists in their practice. It can also be used in the statistical examination of groups (e. g., in the army, boarding schools, orphanages, old people's homes, asylums and prisons) in order to ascertain whether the diets in use provide a sufficient supply of vitamin C.

**Blood Nonprotein Nitrogen and Creatinine in Nephritis**—Cantarow and Davis made simultaneous determinations of nonprotein nitrogen and creatinine of the blood of 112 patients with nephritis and eighty patients with urinary obstruction due to prostatic hypertrophy, in all of whom nitrogen retention was present. They observed that, contrary to some previously reported observations, the degree of creatinine retention was practically the same in the two groups of patients. With total nonprotein values below 130 mg. per hundred cubic centimeters the average increase in blood creatinine was slightly greater in the obstructive than in the nephritic group. It appears that no distinction can be made between purely obstructive urinary lesions and actual renal disease on the basis of the relative degree of blood creatinine elevation.

**Method of Preparing Blood Smears**—Kato describes what he believes is a proper method for the preparation of smears in routine examination of the blood, as well as in a study of the morphology of the blood cells. A drop of blood flowing from a fresh stab wound is received on a clean slide. The optimal size of the drop should be from 3 to 5 mm. in diameter when received on the slide. The position of the drop should be slightly to one side away from the center of the slide. An oblong cover glass 24 by 50 mm., is laid immediately over the droplet and the blood is allowed to spread between the cover glass and the slide into a circle of thin film by the weight of the cover glass. When the blood has spread into a circle of appropriate dimension, the cover glass is quickly drawn across toward the other end of the slide. This will give an

elongated oval of thin film the border of which should be well within the edges of the slide. The slide should be fanned at once and air dried in the usual manner. The film so prepared will be found to have an even distribution of the leukocytes in almost every microscopic field. The erythrocytes will also be found to be spread in a single layer without overlapping or rouleau formation.

## Journal of Pediatrics, St. Louis

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**Infantile Eczema**—Koch and Schwartz present the results of 103 cases of infantile eczema treated at the Milwaukee Children's Hospital. Of the 103 patients, 15 died, a mortality rate of 14.5 per cent, and 45 developed one or more complications, a morbidity rate of 43.6 per cent. Of 56 infants with infantile eczema admitted for eczema alone, 10 died, a mortality rate of 17.9 per cent, and 33 had complications, a morbidity rate of 58.9 per cent. Infants having infantile eczema should not be admitted to an infant ward if they can possibly be treated in a home or foster home supervised by an outpatient department, utilizing the Speedwell technic of Chapin. Sudden death in infantile eczema may be the result of massive respiratory infection of hematogenous origin.

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**Constitutional Treatment of Ocular Syphilis**—According to Greene early and vigorous treatment must be started in all cases of ocular syphilis. Arsenicals are the best therapeutic agents in the treatment of ocular conditions, aside from optic nerve involvement. A negative Wassermann reaction is not conclusive evidence that the patient is not syphilitic. Arsenicals in the treatment of optic atrophy or neuritis must be used with great caution. Many cases of latent syphilis would do better if arsenicals were not used. In acute syphilitic ocular

conditions, palliative treatment with mercury by mouth or small doses of iodides by mouth is inadequate. Such procedures have been criticized and the criticism is justified. Antisyphilitic treatment is often of great value in the treatment of apparently nonsyphilitic conditions.

**Treatment of Chorea**—Robinson believes that most chorea patients do better in bed in an atmosphere free from all influences that tend to stimulate the emotions. In the sthenic cases, the bed should be made on the floor or in a padded crib, bony prominences should be protected by packing with cotton wool. In feeding the patients metal feeding utensils should be employed. Elimination should be stimulated. The medical treatment consists of sedatives to quiet restlessness and hypnotics to aid sleep. Chloral phenobarbital and bromides may be used. The author states that acetylsalicylic acid is as specific in the treatment of chorea as quinine is in tertian malaria. He has seen all movements cease in the most severe cases within a week or ten days. He has never seen a mild case of chorea become severe if this treatment was instituted during the mild stage. He has seen many patients with sthenic chorea, under arsenic treatment for weeks and even months with no benefit symptomatically, get well after a week or ten days of acetylsalicylic acid treatment. It may be given in from 5 grain (0.3 Gm.) doses every two to three hours up to 30 and 60 grains (2 and 4 Gm.) daily. It is well to give an equal amount of sodium bicarbonate with each dose. In the treatment of chorea by this remedy it is necessary to give enough in order to get good results. Children can take quite large doses of acetylsalicylic acid with safety. Lees in the Harvey lecture of 1903 said that he was in the habit of giving as much as 100 to 300 grains (6.5 to 19.5 Gm.) of sodium salicylate daily to children from 6 to 10 years of age, rarely with any evidence of intoxication. If symptoms of intoxication appear the dosage should be decreased. Acetylsalicylic acid should be continued for at least a week after the choreic symptoms have disappeared and be given in gradually decreasing doses. After discontinuance it is well to give the child some tonic medication. Syrup of ferrous iodide is an excellent tonic for children.

## New England Journal of Medicine, Boston

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## New York State Journal of Medicine, New York

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 Prophylactic Use of Pessary in Puerperium. L. A. Siegel. Buffalo.—p. 152  
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**Treatment of Common Leukorrheas**—King states that there are only three possible sources of the common leukorrheas—the endometrium, cervix and vagina. It is now known that the endometrium rarely produces a discharge except in acute specific or nonspecific infections. For the purposes of this discussion therefore, discharge from the endometrium may be ignored. There remain for consideration two sources of leukorrheal discharge, the cervix and the vagina. As the type of discharge from each has well defined characteristics, they should be distinguished as cervical leukorrhea and vaginal leukorrhea. In the treatment of cervical leukorrhea the removal of the glands by coning out the cervix and infolding the cer-

vical shell as proposed by Sturmdorf is an improvement over amputation. Destruction of the glands by other than surgical means can be accomplished effectively in three ways: the nasal loop cautery, surgical diathermy and electrocoagulation. The nasal loop cautery requires the least expenditure for apparatus and with a little experience its use is highly satisfactory. Surgical diathermy is in some respects an improvement over the cautery. It is more positive in action and somewhat better controlled. Electrocoagulation is a still simpler procedure. A bipolar applicator designed for the purpose is inserted into the canal, the current applied and the applicator rotated. The amount of current and length of application will determine the depth of coagulation. Douches in cervical leukorrhoeas, while in no sense curative, do contribute to the patient's comfort. An alkaline douche aids in clearing the vagina of collected mucus. It should be a douche that is nonirritating and astringent and one that has antiseptic properties. Such an agent is found in zinc chloride. The patient is given a solution containing from 30 to 45 Gm of zinc chloride in 240 cc of distilled water. To this is added 1 cc of hydrochloric acid to aid solution. Of this 8 cc is used in a quart of water at night just before retiring. In severe cases a morning douche may also be taken. The author states that the liberal use of a powder in the vagina and the insertion of an elongated absorbent tampon is also a satisfactory method in treating vaginal leukorrhoeas. The powder aids in keeping the vagina dry and the tampon separates the vaginal walls and absorbs any exudate. The tampon remains in the vagina from twelve to twenty-four hours and its removal is followed by a douche. These treatments may be given every three or four days. Many powders may be used but the writer prefers one composed of equal parts of mercurous chloride, boric acid and bismuth subnitrate.

**Choice of Treatment in Acute Empyema**—Eggers points out that the proper treatment of empyema in all its phases requires a knowledge and an appreciation of the physiology of normal respiration and also of the variations in the presence of disease. No one method will always give uniformly good results and no attempt should be made to make a case fit a given method of treatment. On the contrary that treatment which will most likely restore the patient to health in the shortest time should be adopted in each case. There is a common type of empyema, following pneumococcus pneumonia, in which the pus collects in the lower part of the chest. It becomes walled off early and the costopleural angle becomes obliterated by adhesion of the diaphragm to the chest wall. Intercostal incision in the eighth or ninth space or the resection of a portion of the eighth or ninth rib will place the drainage at the dependent part of the cavity. Simple open drainage or the addition of irrigations preferably with surgical solution of chlorinated soda constitutes the after-treatment. The majority of empyema cases conform to this type. Taking this as a basis, one may modify the treatment as indicated in a given case. If there is an unusually large amount of fluid as is so often found in the septic streptococcus cases, and it is felt that the presence and absorption of this fluid itself, regardless of the stage of the pneumonia, is dangerous to the patient, one of two courses may be followed. 1 The fluid may be aspirated and this may be repeated as often as the thorax refills, until the pneumonia has subsided. Coincident with resolution the fluid has usually become pus and has become walled off. A simple drainage opening may then be made and the case treated as a pneumococcus empyema. 2 If more urgent treatment is demanded, one may establish closed drainage either by means of the trocar catheter method or by the insertion of a tube through an intercostal incision. Irrigations may be added. One may continue this method until a cure results or only sufficiently long to bridge over the period of emergency and then convert the drainage into an open one. The aim is to keep the cavity empty and to bring about sterility. This sterility is best obtained by open drainage perhaps favored by irrigation with antiseptic solutions. The author believes that the only safe healing for an empyema is by obliteration of the cavity. The two opposing layers should adhere, and they will adhere just as soon as the surfaces are sterile. Such an obliteration is the best guaranty against recurrence and chronicity.

**Treatment of Empyema Thoracis by Packing**—Connors presents the results in twenty-three cases of empyema thoracis

and in eleven cases of other types of pleural suppuration in which the pleural cavity was packed with plain gauze. This is prepared from the wide bandage roll by folding it longitudinally until it is about two inches wide. The amount of gauze used varies with the size of the cavity. In some cases the author has used as much as thirty yards. He has abandoned the use of iodoform gauze because in a few cases it seemed to produce toxic symptoms, was more expensive and proved no more efficacious than plain gauze. With curved sponge forceps the gauze is introduced into the cavity, particular attention being paid to the region of the apex of the lung and to the sulci formed by the lung and the chest wall. The entire cavity is filled and firmly packed by digital pressure. The edges of the skin wound are held apart by gauze and the cut surfaces are protected by petrolatum gauze. A dry dressing completes the procedure. The author removed the packing in two days in his series of twenty-three patients and replaced it with fresh packing in only one instance. He mentions the following advantages of the packing method: 1 The pleural cavity is cleaned within twenty-four hours and remains grossly clean until the cure is effected. 2 The postoperative management can be easily handled by the surgeon. 3 The introduction of tubes is unnecessary and therefore a source of pleural irritation is removed. 4 It prevents the discomfort that may be due to a mobile mediastinum by fixing it. 5 The large thoracotomy wound with the help of the Cameron light permits a perfect inspection of the pleural cavity and allows the operator to remove all fibrin and break up the necessary adhesions and pockets. 6 And not the least interesting is that it has allowed a clear view of the mechanism of the cure of the empyema cavity and has helped improve the methods directed toward cure.

### Philippine Journal of Science, Manila

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**Sterilization of Surgical Catgut Sutures**—In an investigation extending over two and one-half years, Clock prepared

several thousand catgut sutures from 334 lots of catgut. Twenty-seven different chemical compounds were used for treating these various lots of catgut under a wide variety of conditions, in an attempt to bring about chemical sterilization the various chemical treatments having been applied to catgut ribbons and raw catgut strings as well as to artificially infected catgut. Throughout his experiments he used the standard bacteriologic test, devised and proposed by Meleney and Chatfield, for determining the sterility of catgut, he also used three additional controls for safeguarding the reliability and efficiency of the test. The results of his experiments with copperized catgut sutures demonstrated that copper salts applied to catgut by the von Linden method do not effectively sterilize catgut. His copperized catgut experiments have shown that copper salts exert a bacteriostatic action on the bacteria in catgut, for, when the copper is removed with a suitable neutralizing fluid the bacteria become reactivated. He observed that a 1 per cent solution of sodium thiosulphate and sodium carbonate will not remove copper salts from catgut sutures. A solution consisting of 5 per cent ammonium chloride and 0.5 per cent ammonium hydroxide was found to be an effective neutralizing agent for dissolving and removing copper salts from catgut. Copperized catgut sutures embedded in animal tissues were less readily absorbed and were definitely more irritating than plain catgut sutures. Chemical analyses of catgut sutures of three American manufacturers and one German manufacturer revealed appreciable quantities of copper. Bacteriologic examinations showed the presence of living bacteria in 42 of 156 of the copperized sutures of the three American manufacturers, and in 19 of 36 of the copperized sutures of German make. Peppermint oil catgut sutures were demonstrated by repeated bacteriologic tests to be 100 per cent non-sterile. This method of sterilizing catgut not only fails to sterilize artificially infected catgut but even the ordinary raw catgut made from fresh sheep intestine and processed under ideal sanitary conditions. Bacteriologic tests applied to commercial catgut sutures containing a large amount of a mercury compound have shown that arrested development of bacteria within the catgut is brought about through the bacteriostatic action of the mercury compound. These tests have also proved that removal of the mercury compound from the sutures, by means of a suitable neutralizing fluid reactivates the bacteria, which then are able to grow in the culture medium. The author concludes that a suitable neutralizing fluid must be devised and used to dissolve and remove the particular chemical substance found in the catgut sutures, before the standard bacteriologic test is applied. Carefully controlled heat sterilization is the only uniformly reliable and positive method of sterilizing surgical catgut sutures.

**Streptococcic Infection of Peritoneum.**—In his experiments on rabbits, Smith found that a high degree of immunity to intraperitoneal inoculation with a toxigenic, moderately virulent scarlatinal streptococcus can be produced by the administration of specific antitoxin. This immunity seems to depend on the neutralization by the antibody of toxin produced by the infecting organism *in vivo*, and the resistance of the body to the infection, which is facilitated by the elimination of the toxic factor, is manifested by an increase in temperature, a local and general mobilization of leukocytes, and the removal of the invading bacteria from the peritoneal cavity and blood stream by phagocytic cells. The immunity conferred by the prophylactic administration of antitoxin enables the animal body to survive the acute phase of a disease which is rapidly fatal for the unprotected control, but even this high degree of antitoxic immunity is not sufficient to prevent the development in a certain percentage of cases, of later chronic infections. The therapeutic use of antitoxin has definite limitations. The administration of the antitoxin after the onset of the infection appears to enhance the defensive powers of the body, however, and may be followed by a completely successful resistance to the bacterial invasion and recovery. The author's experiments substantiate the view of Downie that toxin aids the establishment of streptococcic infection by inhibiting phagocytosis. The highest degree of passive antitoxic immunity in streptococcic infection of the peritoneum is produced by prophylactic administration of the serum. In the therapeutic use of antitoxin it would seem, however, that the administration of the serum early in the disease might confer a protection comparable to

that produced by prophylactic injection. Early therapeutic administration of antitoxin should restrict tissue invasion to a minimum and thereby limit the possibility of infections of a focal nature developing as complications.

**Treatment of Acute Intestinal Obstruction.**—Elman states that the cause of death in untreated complete high obstruction (stomach and duodenum) is probably a physico-chemical one due to a depletion of water and salts from the blood into the vomitus or obstructed contents. The resulting dehydration can explain all of the so-called toxic symptoms. Treatment with a modified Ringer's solution effectively restores the blood to normal, improves symptoms, and permits adequate surgical treatment without great risk. The cause of death in low intestinal obstruction (ileum and colon) is probably different but as yet there is little convincing evidence that a 'toxemia' is present. Distention plays a prominent part and the idea is expressed that sudden release of distention may be an important factor in the fatal outcome. The operative treatment in late cases of obstruction should be confined to gradual decompression of the distended intestine; strangulated intestine being merely exteriorized for later removal.

**Congenital Hypertrophic Stenosis of Pylorus.**—Lanman and Mahoney regard pyloromyotomy as the treatment of choice in congenital hypertrophic stenosis of the pylorus. They believe that their analysis of 425 cases establishes its safety. Because the mortality and morbidity are greater in the age group of 6 weeks and over in which there has been a longer duration of symptoms and treatment, they advise operation as soon as the diagnosis is established. The shorter the period of symptomatology, the better is the operative risk. The safety of surgical treatment of pyloric stenosis depends on the close observance of many details. This includes: 1. Combating and overcoming the loss of body fluids before and after operation. The measures to be used are dependent on the degree of dehydration; the degree of dehydration will be greater in cases in which there has been a longer duration of symptoms. 2. Especial care should be taken in preventing loss of body heat before, during and after operation. 3. The greatest care should be exercised in controlling hemorrhage at operation. Rigid asepsis and painstaking approximation of the abdominal wound are necessary. 4. In incising the "bloodless" area of the pylorus one should be sure that all constricting fibers are divided, using especial care not to perforate the mucosa of the pylorus at the duodenal end. It is safer to use blunt dissection in completing the division and spreading of the serous and muscular coats. 5. Hemorrhage from the pyloric incision that is not controlled by hot saline packs must be controlled by suture with or without the use of a piece of rectus muscle. 6. The care during the first four or five days following operation must include maintenance of the fluid requirements by methods supplementary to what can be administered by mouth. The caloric needs usually cannot be met for these first four or five days following operation and it is unwise to attempt to do so. If the fluid requirements three ounces per pound of body weight, are met the caloric intake is of minor importance during this short period. 7. Ether by the open drop method is the best and safest anesthetic.

**Carcinoma of Cervix.**—Schiller believes that it will be possible essentially to improve results in general in regard to carcinoma of the cervix. The method of iodine painting is easy and cheap; a physician can examine from twelve to fifteen women in an hour's time or seventy-five women in a forenoon, five hours. It should be considered a matter of course and it should be one's duty to examine for incipient carcinoma every patient coming for treatment. It is a fact that in early carcinoma, there is no subjective symptom which would force a woman to interview her physician, but experience has taught that if a patient is forced to see her physician because of other troubles such as fibroids, disease of the tubes or discharge, it is only through routine and thorough examination that the cancer is incidentally discovered. There are patients who seek treatment at hospitals because of some gynecologic condition and who on examination are found to be harboring an early carcinoma of the reproductive organs. This condition could be remedied if every woman would have a routine test by the iodine painting method twice or three times a year. It would then be possible to locate a carcinoma of the cervix in its earliest stages and treatment could immediately be instituted.

that would raise the proportion of complete healing to 95 or 100 per cent, especially with the improvement of postoperative roentgen treatment. Such a routine examination would not involve great expense and would not require especially instructed men. The technic used in painting the cervix is as follows. A cervical speculum is placed in the vagina, and with a long spout about 10 to 15 cc of compound solution of iodine is poured and spread with a tampon over the cervix and left in the vagina for about a minute. The solution is then absorbed with a tampon, and the cervix and vagina are cleaned of the excess liquid, and gently wiped. The solution should moisten the entire cervix and no fold should prevent the entrance of the liquid. If the epithelium shows an unstained spot, one must look for cancer and the tissue must be examined histologically. The presence of white, unstained epithelial spots may indicate four possibilities: (1) the presence of carcinomatous layers or incipient carcinomas; (2) the presence of hyperkeratosis, a result of prolapse or descensus vaginae; (3) the presence of hyperkeratosis, a consequence of syphilitic infection; and (4) the desquamation of the upper layers of glycogenous epithelium, which may have been caused by the touching of the cervix with sharp instruments or by the rough insertion of the speculum. Such traumatic desquamations are easily to be diagnosed by their form, as they resemble narrow sharp and straight line scratches.

### West Virginia Medical Journal, Charleston

29: 1-48 (Jan.) 1933

- Survey of Medical and Hospital Service in West Virginia. By the American College of Surgeons—p. 1  
Blindness from Practitioner's Standpoint. Oration on Surgery. J. E. Blaydes. Bluefield—p. 15  
Differential Diagnosis and Treatment of Types of Colitis. J. A. Bargen. Rochester. Minn.—p. 20  
Cancer of Larynx. W. F. Zinn. Baltimore—p. 28

29: 49-96 (Feb.) 1933

- \*Nephritis, Nephrosis and Edema. F. C. Hodges. Huntington—p. 49  
Estimation of Permanent Disability in Industrial Accidents. H. H. Kessler. Newark, N. J.—p. 56  
Study of Sadism. J. E. Winter. Morgantown—p. 61  
Marital Maladjustments as They Affect the Physician. J. S. Klumpp. Huntington—p. 64  
Antepartum Hemorrhage. L. H. Douglass. Baltimore—p. 67  
Transurethral Resection of the Prostate Gland. W. D. Goodman. Ronceverte—p. 69  
Some Benign Pathologic Findings in Fossae of Rosenmüller. Treatment and Sequel. C. E. Park. Parkersburg—p. 72  
Epidural Injection as Treatment for Sciatic Pain. O. H. Fulcher. Welch—p. 74  
Importance of Oral Hygiene in Hospital. E. C. Armbricht. Wheeling—p. 76  
Some Phases of Contract Practice. Outline of Some Important Questions Which Deserve Immediate Consideration. R. G. Leland. Chicago—p. 78

**Nephritis, Nephrosis and Edema**—Hodges discusses the suggestion of Addis that the term "Bright's disease" be applied to renal lesions that do not show inflammation of the kidney. Addis found that the most constant changes in chronic interstitial nephritis which could be approached from the clinical standpoint were to be found in the urinary sediment. He found that the hemorrhagic forms show a predominance of red cells over the white and epithelial cells, while in the degenerative forms, the white and epithelial cells predominate over the red ones. The author states that more than 40 per cent of renal function is lost before the nitrogenous elements in the blood are increased. He has found the test diet of Mosenthal satisfactory and practical. It shows earlier changes than the blood chemistry. In the late stages, the blood nitrogen retention is the more important. He emphasizes the importance of feeding the proper amount of protein in chronic interstitial nephritis. The catabolic protein products should be limited to the capacity of the kidneys to excrete them, but at the same time the anabolic needs should be satisfied, as well as the replacement of the proteins lost in the urine. Too great restriction of proteins often causes anemia, weakness and other concomitant symptoms without benefiting the chronic interstitial nephritis or lowering the blood pressure. Blood cells in the urine in more than normal amounts rule out nephrosis and add the glomerular element. An alkaline ash increases and an acid ash decreases the production of edema. The edema fluids in cardiac, nephritic and nephrotic patients can be differentiated by their protein content. The blood protein is an important

element in maintaining the osmotic pressure of the blood. A marked loss of blood protein results in the development of edema. The disappearance time of intradermally injected physiologic solution of sodium chloride is a valuable aid in the prognosis and in the therapeutic management of nephritis with edema.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Dermatology and Syphilis, London

45: 49-84 (Feb.) 1933

- Some Quantitative Observations on Eczema Reaction. G. H. Percival.—p. 49  
Medical Shock Following Use of Neosarsphenamine. H. Orr—p. 58.  
Chaucer and Dermatology. J. D. Rolleston—p. 62  
Urticaria Papulosa. Notes of Fourteen Cases with Unusual History. J. Kinnear—p. 65

### British Medical Journal, London

1: 213-256 (Feb. 11) 1933

- Medical Profession and Birth Control. J. Young—p. 213  
\*Prevention of Measles by Convalescent Serum. T. M. Hunter—p. 217  
Isolated Dextrocardia. T. H. G. Shore—p. 219  
\*Jejunostomy in Treatment of Massive Gastric Ulcer. O. S. Hillman.—p. 221  
Intermuscular Abscesses with Especial Reference to Abscesses of Thigh. H. A. Phillips—p. 223  
Paroxysmal Tachycardia Associated with Pregnancy. D. F. Anderson—p. 224

**Prevention of Measles by Convalescent Serum**—Hunter administered 5 cc of convalescent serum to 233 patients definitely exposed to measles, 185 entirely escaped infection, giving a protection rate of 80 per cent. In 36 cases the attack was attenuated. In 28 of these the infection was contracted from the original case of measles, and 6 from a subsequent or "primary" case or from a coincident "normal" case, while in 2 cases measles was later reported to have developed beyond that period. Clinically, there was a striking difference in the type of attack after such a small dose as 5 cc., even up to the eighth or tenth day of exposure. Of all the patients who developed measles after serum inoculation not one was really ill, and, in fact, many cases would not have been reported had not the slightest appearance of any sign been noted as evidence of infection. It appears that the best method of utilizing the serum is not to prevent measles by large doses but rather to cause what might be a fatal attack to be an attenuated one with no complications. The active immunity thus produced will be invaluable, whereas the passive immunity lasts only from two to six weeks in the complete state.

**Jejunostomy in Treatment of Massive Gastric Ulcer**—Hillman describes two cases of "massive" gastric ulcer. In each instance the performance of a jejunostomy allowed the general and local conditions to improve so that radical operation became possible. The jejunostomy quickly removed all pain of which the patients complained, showing that rest to the stomach gives relief in these cases. One case illustrates that true rest to the stomach will cause complete healing of a large ulcer in eight months, without the use of alkalis. The case also shows that a patient can be adequately nourished for eight months by means of a jejunostomy and at the same time be rendered fit for an extensive operation. Jejunostomy in no way hinders the performance of a partial gastrectomy. The other case illustrates the spontaneous separation of a gastrojejunostomy. The author concludes that he will not hesitate in repeating the procedure, should occasion arise.

### Glasgow Medical Journal

1: 33-72 (Feb.) 1933

- A Rare Disease of Conjunctiva with Spontaneous Cure. T. S. Barrie.—p. 33  
\*Antitoxin in Treatment of Scarlatina with Especial Reference to Prevention of Complications. A. H. Imrie—p. 36

**Antitoxin in Treatment of Scarlatina**—Imrie carried out an investigation to determine the value of antiscarlatinal toxin in the treatment of scarlet fever, with special reference to the prevention of complications and the relative merits of the intramuscular and intravenous routes of administration. He observed that 1 Antitoxin has a beneficial effect on the

initial toxæmia. It slightly reduces the duration of the rash and pyrexia and often induces a fine localized desquamation. Antitoxin in the dosage given (20 cc. to two patients and 30 cc. to one) has no effect on well established toxic scarlet fever. It is of value in preventing complications if given early, i. e., before the fourth day of illness, and preferably on the first or second day. 2 The route of administration has little influence on the initial toxæmia, duration of rash or duration of pyrexia, and little influence on the duration of desquamation in cases that desquamate generally. Antitoxin given intravenously, however induces, in a large proportion of cases, a fine type of desquamation, frequently localized, and for these cases the period of desquamation is markedly reduced. Antitoxin given intravenously appears to reduce the incidence of complications more than that given intramuscularly. Intravenous administration is often difficult in young children may be dangerous, and is contraindicated in the case of any one who has previously had serum or who appears likely to be sensitive to it. In the author's series of 1616 cases of which 294 were treated with antitoxin, there were only 6 cases of endocarditis. These all occurred in the untreated group, and all gave a history of rheumatism.

### Indian Journal of Medical Research, Calcutta

20 673-920 (Jan.) 1933

- Inquiry into Snake-Bite in Iraq N L. Corhill—p 679  
Effect of Insanitary Condition on Thyroid Gland and Other Organs of the Body R. McCarrison and K B Madhava—p 697  
Effect of Exclusive Diet of Cabbage on Internal Organs of Rabbits R. McCarrison and G Sankaran with statistical examination of data by K. B. Madhava—p 723  
Hydrogen Ion Concentration in Organs of Pigeons Fed on Polyneuritis Producing Diets R. McCarrison G Sankaran and K. B. Madhava—p 739  
\*Nature of So-Called Black Spores of Ross in Malaria Transmitting Mosquitoes R. Knowles and B C. Basu—p 757  
Pharmacologic Action of Plumbago Zeylanica and Its Active Principle (Plumbagin) B B Bhatia and S Lal—p 777  
Some Applications of Spectroscope in Medical Research T C. Boyd and N K De—p 789  
Gynandromorphism in Simulium Case I M Puri—p 801  
Studies on Indian Simuliidae Part VI Descriptions of Males, Females and Pupae of Two New Species from Palm Hills and of Male and Pupa of *S. tenuitarsus* sp. n. from Bengal Terai. I M Puri—p 803  
Id. Part VII Descriptions of Larva Pupa and Female of *Simulium* *Nodosum* sp. nov. with an Appendix Dealing with *S. Novolineatum* nov. nom. (= *S. Lineatum* Puri) I M Puri—p 813  
A Year's Observations in Calcutta on Invasion of Salivary Glands of *Anopheles Stephensi* by Malarial Sporozoites and Influence of Some Climatic Conditions C. Strickland, D N Roy and H P Chaudhuri—p 819  
Experimental Infection of Anopheline Mosquitoes M O T Iyengar—p 841  
Vitamin B Content of Different Samples of Indian Rice by Spruyt's Colorimetric Method Part I S Ghosh and A Dutt—p 863  
Notes on Some Indian Species of Genus *Phlebotomus* Part XXXII *Phlebotomus Dentatus* N Sp J A Sinton—p 869  
Id. Part XXXIII *Phlebotomus Hodgsoni* N Sp J A Sinton—p 873  
New African Sandfly *Phlebotomus Transvaalensis* N Sp J A Sinton—p 879  
\*Cholesterol Content of Blood in Indians and Its Significance in Jaundice A C Ghose—p 883  
\*Significance of Blood Cholesterol in Surgery of Genito-Urinary System A C Ghose—p 889  
Determination of Hydrogen Ion Concentration of Body Fluids and Tissues with Glass Electrode G Sankaran—p 895  
Pharmacologic Action of Thevetin Glucoside Occurring in *Thevetia nerifolia* (Yellow Oleander) R N Chopra and B Mukerjee—p 903  
Rabies Complement Fixation in Rabies Technic Its Purpose and Associated Considerations S D S Greval—p. 913

"Black Spores" of Ross in Mosquitoes—Knowles and Basu believe that the confusion which at present exists in the literature with regard to the "black spores of Ross" is due to the fact that different observers have been dealing with three different structures under that name, viz (1) degenerated and hyperpigmented malarial oocysts, which may be either intact with the investing thin oocyst membrane unruptured, or with the scattered contents of oocysts after their rupture (such structures may possibly act as foreign bodies in the tissues of the mosquito and subsequently become chitinized, the authors consider these, alone, to be the true black spores of Ross) (2) 'chitin corpuscles' which consist of hyperchitinization of localized portions of the finer ramifications of the tracheal system (a study of these forms alone led Mayne to the conclusion that the 'black spores' are of

purely tracheal origin and have nothing to do with the malaria parasites), and (3) fungus infections of the tracheal system of the mosquito possibly in places associated with hyperchitinization. The authors' observations based on material studied in sections led them to the belief that chitin corpuscles and fungal infections of the tracheal system of the mosquito have nothing to do with the true black spores. They give an account of the occurrence of black spores in infected *Anopheles stephensi* after feeding on patients showing infections with *Plasmodium malariae* and *P. falciparum*. The process of evolution of these degenerating and hyperpigmented cysts is described and illustrated. They suggest that the term "black spores," although of historical interest may be rather confusing and perhaps "degenerated and hyperpigmented oocysts" or ruptured contents of oocysts should be substituted.

**Cholesterol Content of Blood in Indians**—Ghose made an investigation of the cholesterol content of the blood in healthy Indians. The normal average value of blood cholesterol is 146 mg per hundred cubic centimeters of the whole blood and 140 mg per hundred cubic centimeters of the blood plasma yielded by Bloor's method, which is about 40 mg per hundred cubic centimeters less than the European and American standards. A wide range of normal values has also been found in Indians. In vegetarians and mixed dieters the cholesterol content of the blood is practically the same. A rich fatty diet after fasting gives rise to a temporary increase in the blood cholesterol. The seasonal variations seem to have little effect on the cholesterol content of the blood. The changes in the cholesterol content of the blood plasma which occur in biliary and hepatic diseases show that (1) a low blood cholesterol with slight jaundice is indicative of either cirrhotic or carcinomatous changes in the liver (2) a frankly low plasma cholesterol with a high icterus index is indicative of a malignant growth of the pancreas, gallbladder and adjoining organs, causing obstruction to the flow of bile, and (3) a high blood cholesterol with jaundice is indicative of gallstones causing obstruction it may or may not be associated with a cancerous condition of the gallbladder and the pancreas.

**Blood Cholesterol in Genito-Urinary System**—Ghose estimated the cholesterol content of the blood in sixty-two patients suffering from surgical diseases of the genito-urinary system. The results obtained do not point to any significant utility of the determination of the blood cholesterol as a routine method, which would forecast the prognosis in a case of urinary disease. A low blood cholesterol has no prognostic significance in cases of urinary obstruction in which operation has been performed, and there is no justification for refusing to operate on a person suffering from urinary obstruction merely because previous to the proposed operation a low blood cholesterol has been reported. Blood urea below 50 mg per hundred cubic centimeters assures a fair margin of safety, and no direct or indirect relation of the blood urea to the cholesterol content of the blood has been found.

### Journal of Tropical Medicine and Hygiene, London

36: 33-48 (Feb. 1) 1933

- Some Findings and Observations in Malaria Survey of a Group of Tea Estates in the Eastern Duars District of Northern Bengal. Some Recommendations for Reduction Control and Eradication of Malaria in the Area Investigated C. C. Harrison and G C Ramsay—p 33  
Pregnancy in Tropics Should the European Woman Come Home? J W Walker—p 41  
Follow Up of Series of Cases of Obscure Chronic Malaria Treated at the Ross Institute for Tropical Diseases F W Willway—p 42

### Lancet, London

1: 287-344 (Feb 11) 1933

- De Minimis W Trotter—p 287  
\*Horseshoe Kidney Account of Five Cases A. Jacobs—p 290  
Starch Fermentation by Gravis Type of Diphtheria. J S Anderson K. E. Cooper F C. Happold and J W McLeod—p 293  
Anesthesia in Tropical Surgery C. Grantham Hill—p 295  
Familial Hepatomegaly of Uncertain Pathology E. B. Smith and Elizabeth O Flynn—p 297

**Horseshoe Kidney**—Jacobs reports five cases of horseshoe kidney and states that, in the presence of renal disease requiring operative intervention, the preoperative knowledge of the existence of a horseshoe anomaly is a tremendous advantage, particularly in the approach. To those experienced in the interpretation of pyelograms, diagnosis should in most cases be easy.

The only other condition that might give rise to confusion is an anomaly of rotation. When this occurs in an excessive degree, the convex border is mesial and the pelvis faces the side. The pyelogram of such a kidney would show the calices directed toward the spinal column. As both kidneys are not usually rotated, the pyelogram of the other kidney would be likely to have a normal appearance. The important diagnostic features of the pyelogram of a horseshoe kidney are: 1 The shadow lies closer to the midline than in the normal, and is usually lower. 2 The pelvis and calices are of a bizarre shape. 3 One or more of the calices on each side point toward the midline or downward, and some of the calices may overlap the shadow of the pelvis. 4 The upper end of the ureter curves outward from and then inward to the vertebral column. Pyelography is the only reliable diagnostic method. A plain radiography might be suggestive by indicating a loss of outline of the psoas shadow and a failure to visualize the one or the other of the renal poles. There is no syndrome of symptoms and signs characteristic of horseshoe kidney. Diseases involving a horseshoe kidney should be treated in the same manner as similar diseases in kidneys normally formed. If resection of the affected segment is necessary, this involves cutting through the isthmus which is usually composed of parenchymatous tissue. It is the author's custom to make an incision starting about 1 inch below the costovertebral angle. This is carried downward and slightly forward to a point about midway in the costo-iliac space when it is made to pass forward parallel with the iliac crest. The muscles and fascia are divided in the line of the incision, which can be prolonged as far toward the midline as seems necessary to give a free exposure of the isthmus. The complete muscular relaxation obtained by spinal anesthesia greatly facilitates the access

### Medical Journal of Australia, Sydney

1: 75 102 (Jan. 21) 1933

Makings of Obstetrics F Meyer—p 75  
Pituitary Gland and Its Syndromes F Beare—p 85

1: 103 136 (Jan. 28) 1933

Significance of Oral Sepsis in the Adult H C Adams—p 106  
Relative Importance of Dental Periapical Infections F G Hardwick—p 110  
Medical Survey of Island of Nauru A M B Grant—p 113

### Quarterly Journal of Medicine, Oxford

2: 1 156 (Jan.) 1933

Congenital Stenosis (Coarctation) Atrisia and Interruption of Aortic Arch Study of Twenty Eight Cases. W Evans—p 1  
Therapeutic Use of Drugs of Digitalis Group Elsie Porter—p 33  
Hepatolienography by Aid of Thorotrast Its Uses and Dangers. P H Whitaker T B Davie and F Murgatroyd—p 49  
\*Linitis Plastica Study of Ten Cases C P Howard—p 59  
\*Erythrocyte Sedimentation Test Clinical and Experimental Study A C R. Walton—p 79

**Linitis Plastica**—After a careful study of the many reported cases of linitis plastica, and from his personal experience, Howard concludes that the majority of cases belong to the sclerosing type of carcinoma. While he is not in a position to deny the existence of a benign form (the so called fibromatosis), he believes that many of the reported cases have not been submitted to a careful enough histologic scrutiny to exclude a malignant process. While syphilis may be an exciting factor in a certain number of cases he suggests that in the majority of the so called syphilitic leather-bottle stomachs there has been a secondary invasion by cancer cells. The clinical picture of every case, whatever its etiology may be, is that of a rather chronic form of cancer of the stomach. An early exploratory laparotomy should be carried out and, when possible, some radical form of surgical procedure undertaken. Rest, fresh air, a mild and bland nutritious diet, nutrient enemas, gastric lavage, paracentesis of the pleura and peritoneum, opiates and cardiac stimulants prolong life and render the patient's final weeks more comfortable.

**Erythrocyte Sedimentation Test.**—Walton describes a new and simple technic for the performance of the sedimentation test which avoids certain fallacies and places the test on a standard basis, so that an exact comparison of the sedimentation rate in various samples of blood may be made. He also gives Blacklock's method for bringing the citrated blood, before measurement of the sedimentation rate, to a standard content of 5,000,000 red cells per cubic millimeter. The chief correction is that for an abnormal blood count. The sedimentation rate undergoes appreciable modifications in physiologic states, such as at birth, during pregnancy and menstruation and the higher sedimentation rate in women than in men, and these modifications should be fully appreciated before an attempt is made to evaluate the influence of pathologic conditions on the sedimentation rate. The sedimentation test is a most delicate and sensitive reaction which faithfully reflects the state of equilibrium of the blood in relation to any pathologic process. It is not specific for any disease, and therefore its uses as a specific diagnostic agent are almost limited to the domain of tuberculosis, where it may be employed in conjunction with a small provocative dose of tuberculin. Used cautiously, however, and as an adjunct to the clinical picture, the sedimentation test, if correctly interpreted, will be found to possess great value and will often weigh down the scales of differential diagnosis. In conditions in which there is a suggestion of latent and acute inflammatory processes, accompanied by a normal temperature and leukocyte count, or in obscure carcinomas, the sedimentation test may be utilized to great advantage, just as, on the contrary, the finding of a normal sedimentation rate excludes an active inflammatory or neoplastic process. Probably the most important use for the test is that of a prognostic agent. Clinical improvement is shown by a slowing sedimentation rate, whereas a fatal evolution is invariably accompanied by an increasing rapidity of sedimentation. In any disease, therefore, the response to treatment can be observed, and a vigilance may be maintained on convalescence. The author states that the sedimentation test may be utilized to differentiate between functional and organic lesions, between innocent and malignant conditions—especially of the gastro-intestinal tract—and between inflammatory and noninflammatory lesions. In pediatrics the test may be employed to advantage, since the finding of a rapid sedimentation rate in the new-born or in the apyretic infant who may merely show a lack of normal development will speak for hereditary syphilis, even in the face of a negative Wassermann reaction.

### Tubercle, London

14: 193 240 (Feb.) 1933

Gold Therapy in Tuberculosis G Schroder—p 193  
Some Experiences at a Village Settlement for the Tuberculous J B McDougall—p 199  
Pulmonary Tuberculosis in Dairy Farm Workers and Others Coming Much in Contact with Cattle Type of Causal Organism in Fourteen Cases W M Cumming—p 205  
Infra Red Photomicrographs of the Asbestosis Lung S R. Glynne—p 208

### Paris Medical

1: 261 276 (March 25) 1933

\*Asthmatic Bronchitis Without Asthma. L de Gennes—p 261  
Monocytosis and Vaccination with BCG J A Bauza—p 263  
Changing Life of Tissues R Imbert—p 267  
Chemistry of Blood in Gout C J Finck—p 270  
Traumatic Cerebral Abscess After Latency of Sixteen Years C. L. Urechia—p 274

**Asthmatic Bronchitis Without Asthma**—Under this caption de Gennes discusses the forms of bronchitis in which there is no apparent spasticity but which are nevertheless equivalent to asthma and should be treated as such. He has seen many cases of this kind. Sometimes the diagnosis is guided in the right direction by an anamnesis of real asthma or a related condition, sometimes the appearance, during the course of the bronchitis of a spasmodic or paroxysmal cough terminating in a slight attack of dyspnea, or the long drawn out apyretic character of the disease and its resistance to the usual treatments of bronchitis may indicate its asthmatic origin. Sometimes, but not always, an eosinophilia of the sputum, or occasionally of the blood, will determine the diagnosis of asthma. In some cases there are no clinical or biologic signs to guide the diagnosis and only the response to treatment of asthma establishes the nature of the disease. There are cases still more difficult to diagnose in which the asthmatic bronchitis succeeds an infectious bronchitis and the asthmatic element is not recognized. Spraying the nose with atropine has been recommended for the treatment of these forms of bronchitis. Injections of epinephrine with or without hypophyseal extract sometimes cure them instantly. Ephedrine either sprayed or ingested is a simple and, sometimes, the best treatment. Sunlight and altitude may also produce a rapid cure. Protein therapy has given little success. Three case reports are given.

## Revue Française de Gynécologie et d'Obst, Paris

27 121 176 (March) 1933

- Determination of Quantity of Hormone of Pregnancy in Urine in Various Stages of Normal and Pathologic Pregnancies. A. Weymeersch, R. Bourg and M. Rocmans—p 121
- Cyclic Variations in Female Fertility. R. de Guchteneere—p 138
- \*Method for Excluding Operation Zone from Peritoneal Cavity in Low Cesarean Section. J. L. Wodon—p 158

## Exclusion of Operative Zone from Peritoneal Cavity

—Wodon describes a simple technic for performing low cesarean section extraperitoneally. The first step is a median subumbilical incision of the skin and fascia along the white line. The rectus muscles are separated, exposing an oval zone of parietal peritoneum with the bladder at the bottom. A transverse incision of the parietal peritoneum is made (as long as possible) in the immediate vicinity of the bladder. The bladder is pushed downward behind the pubis by an assistant. A transverse incision of the uterine peritoneum is made in the immediate vicinity of the bladder and is prolonged to the right and left broad ligaments. The uterine peritoneum is detached as high as possible from the entire anterior face of the inferior segment. The flap of the parietal peritoneum and the upper flap of the uterine peritoneum are immediately sutured. The free peritoneum on each side of the uterus is closed with a purse string suture. A compress is placed over the peritoneal suture, leaving only the lower segment of the uterus and the bladder uncovered. The bladder is separated from the lower segment of the uterus and is held down by the assistant while the surgeon begins a transverse incision of the uterine muscle enlarging it with scissors. The edges of the uterine gap are provisionally closed with Duval's forceps. Five units of solution of pituitary is injected in the uterine muscle, delivery is spontaneous or obtained by Credé's method. The uterine wound is sutured with individual catgut sutures and then with a whip-stitch. The bladder is placed in front of the inferior segment and is fixed close to the peritoneal suture by individual catgut sutures. The rectus muscles and the aponeurosis are sutured, a drain of silkworm-gut being placed under the aponeurosis in the lower angle of the wound. Skin suture is done with silkworm-gut or clips. If necessary after the uterine wound has been closed, a large gauze drain may be pushed down behind the bladder till it is felt through the vaginal wall and after closure of the abdominal incision an anterior colpotomy is performed guided by the retrovesical tampon. The transverse incision of the inferior segment employed in this operation does not require much detachment of the bladder and does not endanger any vein of the latero uterine plexus. Permanent exclusion of the abdominal cavity by sutures is preferable to temporary exclusion.

## Schweizerische medizinische Wochenschrift, Basel

GG 301 324 (April 1) 1933

- Roentgenologic Examination in Suspected Pulmonary Tuberculosis. F. Egger—p 301
- Roentgenogram Six Hours After Introduction of Contrast Medium in Tuberculous Peritonitis. M. Saegesser—p 304
- Cultivation of Tubercle Bacilli from Blood Stream. T. Iibuchi—p 307
- Hematogenous Tuberculosis. J. Steiger—p 310
- Occupational Therapy and After Care for Tuberculous Patients. B. H. Vos—p 313
- Cultivation of Mycobacterium Tuberculosis. M. Bornand—p 315
- Surgical Treatment of Pulmonary Tuberculosis. Phrenicotomy and Filling by Baer's Method. E. Trojån—p 317
- \*Paravertebral and Suprascapular Thoracoplasty. F. Ody—p 318

**Paravertebral and Suprascapular Thoracoplasty**—Ody describes the technic of high partial thoracoplasty by the paravertebral and suprascapular route. Usually he performs this operation as the second intervention in a total thoracoplasty in certain fibrocaceous tuberculoses and acute cases in which pneumothorax alone is insufficient. The chief advantage of performing the operation in two stages is that it permits resection of the first rib, without which the compression of the diseased lung and particularly the apex remains incomplete. The author usually resects all ribs from the eleventh to the fifth inclusive during the first intervention and completes the thoracoplasty in from eight to fifteen days later. The first step of the second intervention consists in making an incision, starting slightly behind the acromioclavicular articulation, running parallel with the upper edge of the scapula about two fingerbreadths above it and turning at the medial angle of the scapula to descend paravertebral half way between the spinal edge of the scapula

and the spinous processes. It curves slightly away from the spine as it approaches its end about three fingerbreadths below the tip of the scapula. The incision crosses the trapezius muscle, but in its uppermost part it is parallel to the muscle fibers, which are only dissociated not divided. Keeping the innervation intact is more important than keeping all the muscles intact. The spinal nerve, which appears immediately below the trapezius toward the middle of the suprascapular incision, and the adjacent suprascapular and posteroscapular venous plexus are preserved. The rhomboid muscle is divided close to its spinal insertion to avoid the rhomboid nerve. It is essential to avoid cutting the levator scapulae, which is the key to the subtrapezian region. The levator scapulae is drawn aside with a retractor and with it the spinal nerve, the rhomboid nerve, the posterior scapular artery, the anastomosis of the posterior scapular and the suprascapular artery, and the perilevator venous plexus. The first rib appears between the insertions of the posterior scalenus muscle and those of the first external intercostal. After denudation and resection of the ribs, the rhomboid and trapezius are sutured in separate planes and the incision is closed.

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- Primary Chronic Focal Osteomyelitis. M. M. Kasakow and A. S. Pokrowski—p 417
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- Origin of Gastric Hemorrhages After Operations. Fenkner—p 487
- \*Blood Serum Lipase Determination in Diagnosis of Acute and Chronic Diseases of Pancreas. A. Schmitt—p 510
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**Central Chondrosarcoma of Metaphyses**—Guleke points out that central chondrosarcomas of tubular bones near the joint can be readily recognized in a roentgenogram. They represent a distinct group differing from peripheral sarcoma by their relative benignity as pointed out by Kienboeck, Greifenstein, Phemister and others. The author reports three cases whose histories and course bear a great similarity to one another. Occurrence of a fracture in two cases had no effect on the rate of growth. The roentgenogram is so characteristic as to enable one to differentiate this tumor from other sarcomas. It differs from the central sarcoma by a characteristic honeycombed appearance due to a great number of areas of lesser density evenly distributed throughout the tumor. The differential diagnosis from osteitis fibrosa is more difficult but is possible if the following points are observed: 1. Bone enlargement in chondrosarcoma takes place more regularly in all directions. 2. The tumor contains a great number of small, equal areas of lesser density, which are less transparent than similar areas in osteitis fibrosa because they are filled with cartilaginous tissue. 3. The outline of the tumor is less distinct than in osteitis fibrosa. 4. A radiating appearance is observable in some parts of the tumor as well as cortical thickening in other parts. 5. The tumor may break through into the surrounding soft tissue. Biopsy is indicated in doubtful cases. The course of the disease is long and relatively benign, a fact pointed out by Kienboeck, Phemister and Greifenstein. In the author's cases, symptoms existed seven, eight and fourteen years prior to the diagnosis. Phemister's patients were alive ten, nine and nine and one-half years after the excision of the tumor. Kienboeck's patient lived twenty years after resection of the chondrosarcoma of a vertebra. Because metastases are surprisingly late in appearance, an operation may still be undertaken at a stage at which it would be deemed hopeless in a central sarcoma. The author considers it unnecessary to perform an exarticulation or amputation of the limb. Resection of the tumor is sufficient, but removal of the joint capsule is important in prevention of recurrence.

**Bleeding Nipple**—According to Wolpers, a bleeding nipple suggests pathologic or physiologic changes in the breast. It makes its appearance as a single, continued, intermittent or cyclic discharge. The symptom may be observed in the so-called precancerous states, in cancer in benign pathologic processes of the breast and in many histologically obscure benign processes with or without tumor formation. At the University of Leipzig surgical clinic there were five instances of bleeding from a nipple among 414 cases of carcinoma of the breast, an incidence of 1 per cent. No instance was observed in which the bleeding nipple proved to be a precancerous condition. Klose's rule, therefore, that every bleeding breast should be submitted to a radical amputation with dissection of the axillary lymph nodes appears to the author too dogmatic. In Payr's clinic, bleeding alone is not considered an indication for radical intervention. A difficult problem is presented by cases in which no palpable tumor is demonstrable. Such cases were known occasionally to pass on to malignancy though more frequently they cleared up. A bleeding nipple in a man is much more likely to be associated with malignancy and therefore constitutes a definite indication for a radical operation.

**Diseases of Pancreas**—Rona and his school have in recent years demonstrated the presence of an atoxyl-fast pancreatic lipase in the blood serum. Schmitt presents his results with the stalagmometric method of Rona and Michaelis for determination of the pancreatic atoxyl-fast lipase in the blood serum in acute and chronic diseases of the pancreas. He found that the lipase was increased considerably above the normal in every one of the ten investigated cases of acute hemorrhagic pancreatitis. The degree of severity of the process, however, could not be estimated from these observations. The lipase increase persisted longer than the corresponding diastase increase in the urine. An increase in the blood lipase was likewise found in 90 per cent of thirty cases of chronic pancreatitis. In gallstone disease the commonest cause of both acute and chronic pancreatitis, the lipase was found frequently above normal though it never approached the values seen in acute necrosis of the pancreas. The lipase content of the blood was frequently found increased in ulcer of the stomach or duodenum, in all probability as the result of pancreatic involvement. No increase was noted in ileus, perforation of gastric ulcer or peritonitis conditions frequently confused with acute hemorrhagic pancreatitis. The lipase was not increased in tuberculous or chronic suppurative processes. On the contrary, it was found not infrequently diminished. The lipase was increased in hyperthyroidism and in primary and secondary anemias and there was even a greater increase in carcinoma. The author concludes that the determination of pancreatic lipase in the blood serum is of considerable value for the diagnosis of acute hemorrhagic pancreatitis and that in many respects it is superior to the determination of diastase in the urine.

**Recurrence of Inguinal Hernia After Operation.**—Birkenfeld discusses the role of operation and its complications and the role of the original factors responsible for the formation of hernia in the question of postoperative recurrence. In an analysis of 468 cases of hernia he calls attention to the existence of two sets of factors responsible for the formation of a hernia in the first instance: (1) external causes such as occupation, sport or trauma, and (2) internal predisposing factors. The latter have to do with a general weakness of the connective tissues suggested in some of the cases by the simultaneous existence of hemorrhoids, varices, enteroptosis, prolapse of the female genitalia or flatfoot. The existence of a familial congenital predisposition to hernia is of even greater importance. The author found a congenital predisposition in 225 of 468 cases, or 48 per cent. The predisposition in men was four times as great as in women. External factors, such as occupation or sport, had little influence on the incidence as seen from the fact that congenital hernia in infants and in children showed an even greater preponderance in males, namely, a ratio of 58:1. It is obvious that the operation removes the hernia and not the predisposing causes. The author attaches little importance either to the operation or to its complications, such as wound infection or bronchitis. The role of congenital predisposition is evident from the fact that, in a follow-up study, a recurrence was observed in 50 per cent of the cases presenting a history of a congenital predisposition. All patients with two

recurrences had a congenital tendency. The author recommends for such cases avoidance of unusual body exertions after operations for the cure of hernia so as to mitigate at least the external causative factors.

## Beiträge zur klinischen Chirurgie, Berlin

157: 225-336 (March 15) 1933

- Results with Böhler's Method of Treating Fractures in More Than One Thousand Cases. M. Kaspas.—p. 225
- Experimental Studies on Prevention of Thrombosis by Influencing Vessels of Extremity by Means of Elastic Compression. E. Mackrath.—p. 239
- Experimental Studies on Relationship of Glands of Internal Secretion to Wound Healing. H. J. Lauber.—p. 244
- Contribution to Treatment of Fractures of Neck of Femur. Femoropelvic Nailing After Hotz. H. Hillebrand.—p. 266
- Contribution to Treatment of Pseudarthrosis of Neck of Femur. Angle Formation After Pauwels. H. Hillebrand.—p. 281
- Simultaneous Subcutaneous Tears of Both Lower Patellar Tendons. B. Thiesbörger.—p. 286
- \*Carcinoma in Burn Scar as Well as Symmetrical Carcinoma of Extremities. G. Arndt.—p. 305

**Carcinoma in Burn Scar and Symmetrical Carcinoma of Extremities**—Arndt reports a case of bilateral symmetrical carcinoma of the legs developing in scars from a burn. He presents statistics to show that scars resulting from burns are particularly prone to develop carcinoma. Among 20,544 cases of cancer in Heinemann's statistics, there were 207, or 1 per cent, cancers of the extremities. In 10,864 cases of cancer reported by Gurlt, there were 168, or 1.5 per cent, carcinomas of the extremities. In von Brunn's statistics of 368 cases of cancer of the extremities, 33, or 9 per cent, developed in scars from a burn. It appears, therefore, that 9 per cent of cancers of the extremities are caused by burns or that 0.1 per cent of all cancers are caused by scars due to burns. Of the latter three fourths are found in the lower extremities. The carcinoma may develop immediately on scar formation or after an interval of many years. The growth may assume the form of an ulcer or of a tumor. The incidence in men is three times as great as in women. The average age was 47 years. Carcinomas developing after an interval of many years occur in the majority of cases (more than 50 per cent) in burns sustained in earliest youth (first decade of life). Carcinomas with a short interval belong to a more advanced age, the average being 48 years. Thus it appears that the burn acts as a predisposing rather than causative factor. Scars on extremities are more liable to cancer because of greater exposure to traumatism. Histologically the tumor is typically one made up of flat cornified epithelium. Like all skin carcinomas, it is the least malignant of all carcinomas and because of the possibility of radical removal offers a fair prognosis. The literature contains nine cases of symmetrical carcinoma of the extremities. The author's case is unique in that it describes for the first time a symmetrical bilateral carcinoma of the extremities developing in scars from a burn.

## Deutsche medizinische Wochenschrift, Leipzig

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- \*Five Years' Experiences with Hyperthermia Produced by Physical Methods. F. Walinski.—p. 397
- Treatment of Ovarian Abdominal Cancer. P. Strassmann.—p. 402
- Interpretation of Delicate Gallbladder Shadow in Cholecystogram. E. Elias.—p. 404
- \*Aspects of Oblongata Crises with Respiratory Paralysis in Tabes Dorsalis. H. Strauss.—p. 406
- New Nonspecific Irritation Therapy According to Dr. Bertram. H. Freund.—p. 407
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- Experimental Analysis of Avitaminoses. W. Kollath.—p. 410
- Disorders of Skin and of Genital Organs in Influenza. W. Engelhardt.—p. 412
- Efforts for Unification of Cancer Statistics. W. Schaefer.—p. 415

**Hyperthermia Produced by Physical Methods**—Walinski produces hyperthermia by injection of hypertonic solutions of sodium chloride and by hot baths with subsequent packing so as to retain the hyperthermia. He first tried this form of fever treatment five years ago. The intravenous injection of 10 cc of a 20 per cent solution of sodium chloride is given in order to reduce the sweat secretion and to stimulate the heart action. By reducing the sweat secretion it becomes possible to retain the increased temperature for longer periods. Other advantages of the sodium chloride injection are that it frequently facilitates a more rapid increase in the body tem-

perature during the bath and that the hyperthermia is usually more readily tolerated. About five minutes after the injection, the patient is given a bath with a temperature of from 37.5 to 38 C (99.5 to 100.4 F). After from twelve to thirty minutes, this temperature is increased to from 41 to 42 C (105.8 to 107.6 F). After the desired temperature has been reached, the patient is wrapped in one flannel and five wool blankets. The number and the duration of the pyrexia treatments depend on the disorder for which the patient is treated. The first treatment should, as a rule, not last longer than three hours, and the temperature should not exceed 39.5 C (103.1 F). Later the body temperature may be increased to from 41 to 41.5 C (105.8 to 106.7 F), and the treatments may last from five to seven hours. In the patients treated by the author the number of treatments varied between twelve and twenty and they were generally given every other day. In patients with dementia paralytica, the pyrexia treatments were followed by or combined with antisyphilitic therapy in the form of injections of bismuth compounds and neoarsphenamine. Tests revealed that during the physical hyperthermia there is a retention of sodium chloride and also an increase in the protein metabolism. Blood sugar content and alkali reserve decrease during the first stage of hyperthermia but increase again in the later stages, and a leukocytosis develops. The treatment was more or less effective in tabes dorsalis, cerebrospinal syphilis, dementia paralytica, multiple sclerosis, postencephalitis parkinsonism, myelitis polyneuritis, sciatica, chronic arthritis, pyelitis, bronchial asthma and inflammatory disorders of the adnexa. However in amyotrophic lateral sclerosis in all but one case of gonorrhea, in herpes zoster, and in psoriasis and nephritis the treatment was ineffective. Severe complications were never observed and none of the 353 patients died as the result of the treatment, whereas in therapeutic malaria the fatalities reach from 8 to 14 per cent. The author emphasizes that, compared to other forms of fever therapy, physical hyperthermia has the advantage that the dosage is more readily controlled and that it involves no danger whatever. The only contraindications to the treatment are severe cardiac and renal disorders. Patients with hypertension tolerated high temperatures comparatively well.

**Oblongata Crises in Tabes Dorsalis**—Strauss relates the clinical history of a patient, aged 38, who had the typical symptoms of tabes dorsalis, particularly, frequent attacks of gastric crises and of crisis-like attacks of lancinating pains, and who had twice attacks of respiratory paralysis with inspiratory stridor. In a review of the literature the author found records of twenty-one other cases of respiratory paralysis in tabes dorsalis. In many of these cases the attack developed shortly after administration of an alkaloid, but in some, and also in the reported case, no medication of this type had preceded, and from this the author concludes that respiratory paralysis may develop in patients with tabes dorsalis without any exotoxic influence. The reported case is noteworthy because in addition to the central respiratory paralysis, there developed still another inhibition of the respiration a severe inspiratory stridor, which was counteracted by intubation. The author thinks that this concurrence of respiratory paralysis and paroxysmal disturbance of the laryngeal innervation can be explained only by a common point of origin of the two conditions in the medulla oblongata, where the respiratory center and the motor nuclei for the laryngeal innervation are close together. Moreover, the loss of consciousness could likewise be explained by a functional disturbance in this region and therefore the author assumes a crisis-like disturbance in the oblongata. For the treatment of such conditions he advises the use of artificial respiration, administration of a lobelia preparation and intubation.

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\*Obstetric Significance of Varicosis. H. Naujoks—p. 437  
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\*Treatment of Arthritides with Roentgen Irradiation. B. W. Ercklentz.—p. 443

\*Influence of Exclusive Raw and Cooked Food on Growing Organism and Its Duration of Life. H. Bischoff—p. 445  
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Occurrence of Hypoplasias in Teeth in Genuine Epilepsy. R. Spitzer—p. 451

Method for Prevention of Pneumothorax Exudates. Unverricht and Dosquet—p. 451

Electrocardiography of Embryonic Chicken Heart in Tissue Culture Simultaneous with Cinematography of Movements. W. Lueg and K. Hofer—p. 452

Sterilization for Eugenic Reasons. R. Fettscher—p. 454

**Obstetric Significance of Varicosis**—Naujoks thinks that genital varicosis has not been given sufficient consideration as a frequent cause of severe complications in pregnancy. The chief danger of genital varicosis lies in hemorrhage. This may occur during pregnancy, at delivery or post partum. Varices discharging externally may be located in the vulva, vagina or perito, where they can usually be reached and blocked, or higher up in the cervix and the uterine wall, where they usually necessitate emptying of the uterus and laparotomy. Varices discharging internally may be located in the outer layers of the uterine wall close to the peritoneum and discharge into the peritoneal cavity or they may lead to hematomas in the labia, paracolpium or broad ligaments. Varicosis may be mistaken for placenta praevia, premature detachment of the placenta, laceration of the cervix, rupture of the uterus or acute cardiac weakness. In case of severe hemorrhage toward the end of pregnancy attributed to placenta praevia the author advises a thorough examination of the vulva and lower end of the vagina for sources of hemorrhage before undertaking a surgical intervention. Sometimes diagnosis is impossible, in a case in which no varices were seen, cesarean section showed a normal placenta but severe varicosis of the cervix and anterior wall of the uterus. In another case, placenta praevia and varicosis occurred together. In patients with severe varicose hemorrhage, a repetition during future pregnancies should be guarded against. Genital varicosis may cause severe difficulties post partum, an episiotomy or a slight laceration may cause profuse and fatal hemorrhage. If the source of hemorrhage is in the vulva or near it deep acupression above and below are usually effective, if it is higher up it is best to apply large blunt clamps to the cervical wall and to any visible varicose plexus. If these measures fail, tamponade of the uterus, cervix or vagina with a nonabsorbent material is absolutely indicated. Varices discharging into the peritoneal cavity require laparotomy. Postpartum hematomas, if not visible should be suspected in case of tension, deep pain or unexplained anemia, careful palpation, especially from the rectum, should be undertaken. Treatment must be conservative; incision is indicated only if resorption does not occur within many weeks and there is much discomfort. The prognosis of varicose hemorrhages is difficult because it usually occurs in women of low resistance, especially sensitive to loss of blood.

**Treatment of Arthritides with Roentgen Irradiation**—Ercklentz reports favorable results with high voltage roentgen therapy in secondary chronic arthritis, chronic gonorrheal and syphilitic arthritis, endocrine chronic periartthritis and arthritis deformans. He thinks that the roentgen rays have a favorable action on disturbances of the capillary mechanism of the joint, which in his opinion are at the basis of arthritis, and that they alleviate the nutritional disturbances of the diseased joint. This explains the change from an opaque, spotted atrophic appearance of the bony structure to normal structure, which has been pointed out by some observers as an effect of roentgen therapy. Roentgen irradiation in arthritides thus does more than alleviate pain and increase mobility and its use is indicated in all forms of chronic arthritis except in those with severe osseous changes and ankylosis, and in acute polyarthritis. It can do little to alleviate the osseous and cartilaginous changes in arthritis deformans, but it often results in good mobility of joints with severe anatomic changes. The roentgen rays effect a resorption of infiltrations and inflammatory exudates of the capsular ligament, which often cause severe pain, and by removing the cause of the pain remove one of the chief impediments to motion.

**Raw and Cooked Food**—Bischoff conducted experiments with rats to test the statement of Friedberger and Seidenberg that, in rats fed exclusively on peas an increase in the duration of cooking of the peas is paralleled by a progressive decrease in the duration of life, and that, with a one-sided nourishment such as green peas, it is possible to keep the animals alive for a longer period only by the use of raw food but not by use of overcooked food. Determinations of the amount of food necessary to bring about an increase of 1 Gm. in body weight were included in the author's experiments and showed a pronounced

inferiority of nourishment with raw peas, while it seemed to make little difference whether the cooked peas were fed after one or three hours of cooking. His experiments indicate that a diet of raw food is not superior to a diet of cooked food. The development as well as the duration of life of the rats fed on raw peas was inferior to that of the animals fed on cooked peas.

### Klinische Wochenschrift, Berlin

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 \*New Blood Disease Constitutional Thrombopathy E. A. von Willebrand and R. Jürgens—p. 414  
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**Constitutional Thrombopathy**—Von Willebrand and Jürgens describe a hemorrhagic diathesis, which they designate as 'constitutional thrombopathy'. One of the authors observed this diathesis several years ago in a girl aged 4. The child had extensive hemorrhages in the skin and in the mucous membranes and almost uncontrollable hemorrhages from the nose and the gums. Examination of the blood revealed thrombocytes of normal number and shape, normal coagulation and good retraction, but considerably prolonged bleeding time. More extensive investigations showed that this disorder was familial and hereditary. In three families that were studied, numerous members showed signs of this hemorrhagic diathesis, which could be traced back four generations. Both sexes were affected, but women somewhat more frequently and more severely than men. The most frequent form of hemorrhage in this condition is nosebleed to which nearly all these patients were subject at some time or other in their life, generally during childhood or puberty but occasionally during the menopause. Hemorrhages from the gums are another characteristic symptom and often give the impression of a scorbutic condition. The prolonged hemorrhages after slight injuries resemble greatly those of hemophilia. However, the blood picture, particularly the number of thrombocytes is normal. The morphology of the platelets is largely normal but the authors noted that there were more large ones than is normally the case. Moreover in spite of the normal number of platelets the thrombosis time (measured in the capillary thrombometer according to Morawitz and Jürgens) was enormously prolonged. In the case of the little girl it was more than ten times the normal length. The authors consider this deficient thrombus formation and changes in the blood fluid the essential factors of constitutional thrombopathy. The coagulation time of the blood is entirely normal, and this factor puts the discussed hemorrhagic diathesis in direct contrast with hemophilia. It differs from essential thrombopenia in that the number of platelets is not reduced. In Glanzmann's thrombasthenia, the bleeding time is normal pathologic forms of platelets are regularly found and retraction of the blood clot is abolished, which proves that it is a disturbance of the last phase of the coagulation process. The described constitutional thrombopathy, however, is essentially a functional disturbance of the platelet apparatus. The authors consider blood transfusion the most effective treatment of this form of hemorrhagic diathesis.

### Medizinische Klinik, Berlin

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Treatment of Inflammatory Diseases with Paste of Silicic Acid Glycerin Boric and Salicylic Acid, Iodine and Volatile Oils H. Oberbach—p. 429

Improved Methods for Determination of Hydrogen Ion Concentration in Biologic Fluids G. Gollnow—p. 431

**Pseudotuberculosis**—By the term pseudotuberculosis Neugebauer means a specific inflammation, usually accompanied by nodule formation in the liver and occasionally in other organs, and caused by *Bacterium pseudotuberculosis-rodentium* Pfeiffer. The disease is well known in animal pathology but the author found only eight human cases reported in the literature. He reports in detail the results of postmortem pathologic and bacteriologic examinations in a case diagnosed at necropsy. In a man, aged 45, reported by his physician as having diabetes mellitus an undiagnosed illness of three weeks' duration, accompanied by fever, resulted in death. At necropsy a specific pathologic process with nodule formation was found in the liver, together with a general septicemic condition of the whole organism. Cultivation of *Bacterium pseudotuberculosis-rodentium* Pfeiffer from the liver and the spleen confirmed the diagnosis of pseudotuberculosis indicated by the gross and microscopic anatomic examinations. Inoculation with pure cultures of this organism produced identical changes in the livers of guinea pigs. *Bacterium pseudotuberculosis* was recovered in pure culture from the organs and blood of the test animals. Suspensions of *Bacterium pseudotuberculosis* isolated from the patient were agglutinated by his serum in 1:2,000 dilution.

**So-Called Weak Stomach**—Kräupl states that the gastrointestinal disturbances, ranging from transitory stomachache, heartburn, postprandial vomiting or diarrhea to more severe disturbances experienced by many persons periodically or permanently and considered as manifestations of a so called weak stomach, are due to a disproportion between the functional capacity of the digestive tract and the dietetic demands made on it. One factor of this disproportion is an inadequate digestive function resulting from constitutional inferiority of the digestive tract or, more often, from acquired disturbances of the digestive function, such as infectious-toxic disturbances, anatomic changes, adhesions and surgical interventions, sympathetic or endocrine disturbances, psychic disturbances, constipation, reflex changes in disease of the gallbladder and pancreas, or cardiovascular disease. The other factor is an incorrect diet, that is, one not suited in quantity or quality to the functional capacity of the digestive tract. The production of the whole series of symptoms of "weak" stomach up to ulcer formation could often be avoided if the diet were made to conform permanently to the capacity of the digestive function. Therapy should aim at increasing the functional capacity by alleviating the acquired disturbances (often possible in cardiovascular disease, constipation and psychic disturbances), and at reducing the demands on the digestive function by administering only foods suited to the patients' digestive capacity.

**Pallida Antigen Reaction**—From a comparison of the pallida antigen reaction with the Wassermann reaction and the Meimicke clarification reaction Vohwinkel concludes that the pallida antigen reaction is a distinct improvement on the original Wassermann reaction and is especially superior to it in the examination of cerebrospinal fluid. The pallida antigen reaction is a complement fixation test for syphilis, performed exactly like the Wassermann reaction except that, in place of the usual antigen an antigen of cultures of *Spirochaeta pallida* in saline solution containing 0.3 per cent of phenol is used. This phenolized spirochetal antigen was introduced by Gachtgens a few years ago. Among 2,246 serums tested, 1,819 were negative with the Wassermann, Meimicke and pallida reaction. Among 284 serums from clinically and anamnestically certain cases of syphilis, 46.4 per cent were not detected by the Wassermann reaction, 8 per cent were not detected by the Meimicke reaction and 11.6 per cent were not detected by the pallida reaction. The pallida reaction detected 84 per cent of the syphilitic cases that were not detected by either the Wassermann or the Meimicke reaction. Although no definite conclusion concerning the specificity of the pallida reaction (tested chiefly with respect to malaria) could be made, it appeared to be equal to that of the Meimicke reaction but slightly inferior to that of the Wassermann reaction. In examinations of cerebrospinal fluid the pallida

reaction detected eight among seventeen positive cases that were not detected by the Wassermann reaction, and in three cases it gave a stronger positive reaction.

### Münchener medizinische Wochenschrift, Munich

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Ancylostomiasis in German Coal Mines—a Surmountable Problem H Bruns—p. 425  
Definition and Frequency of Manic Depressive Diseases K H Stauder—p. 430

**Angina Pectoris Diaphragmatica.**—Hofbauer calls attention to the contradictions in the numerous suggestions that have been made for the treatment of angina pectoris. He shows that these contradictions arise from the fact that neither the location nor the nature of the disorder is clearly understood. The pathogenesis of angina pectoris has been ascribed to changes in the coronary arteries, to myocardial changes and to aortic changes. However anatomic researches and animal experiments based on these theories did not clear the pathogenesis of angina pectoris. Careful observation of the clinical aspects of attacks of angina pectoris revealed that there are three different conditions that may lead to an attack: overfilling of the stomach and intestine, the influence of cold and overexertion. The common factor of these three conditions is their influence on the respiratory mechanism on the statics and kinetics of the diaphragm. This becomes the more understandable by the author's observation that angina pectoris concurs with changes in the position and the motility of the diaphragm. He calls attention to the anginous conditions that occur following operative treatment of pleural empyema, in which it is always the change in position of the patient that causes the attack, while return to the old position, as a rule, counteracts it. Roentgenoscopy reveals always in these cases a certain change in the position of the diaphragm and an inhibition of its motility, for it adheres to the lateral thoracic wall and is in an abnormally high position. The "respiratory blockage" and the pains in the chest are thus easily understandable. However, these symptoms develop not only in case of pleural adhesions but also when the diaphragm is forced upward as the result of abdominal pressure. In this connection the author calls attention to reports by other observers, to M Herz's "phrenocardia" to Römheld's "gastrocardiac syndrome," to von Bergmann's "epiphrenal syndrome" (THE JOURNAL, July 2, 1932, p. 89) and to Sauerbruch's "hiatus hernia" (THE JOURNAL, Nov 12, 1932, p. 1734). However, he warns against generalization of a casual connection between diaphragmatic hernia and angina pectoris, and he cites a case in which the anginous disorder did not develop until after the closure of a diaphragmatic hernia. Yet he accepts as generally true a connection between angina pectoris and diaphragmatic disturbances. In cases in which the diaphragm is free from organic disorder changes in the central circulatory apparatus (coronary arteries, aorta, myocardium) may produce a hyperesthesia of the diaphragm by means of a viscerosensory reflex, the hyperesthesia in turn producing a respiratory blockage and a painful contraction of the chest. The fact that the dysfunction brought on by organic changes has practically the same symptoms as that produced by reflex action is explained by the fact that in the two cases there is the same effect, namely, hyperesthesia of the diaphragm.

**Ambulatory Pneumothorax Therapy.**—On the basis of observations on 229 cases, Reichel and Biedermann consider ambulatory pneumothorax treatment possible, provided the patient is in good general condition and free from fever. How-

ever, at the beginning of the treatment the patient should be hospitalized for about ten days in order to have him under observation not only while the pneumothorax is induced but also during the first and second refilling. In case of fever or of other troubles, the period of hospitalization should be extended. The pneumothorax was unilateral in 208 and bilateral in 21 of the cases. In the latter the hospitalization was extended ten days of hospital treatment being given for each side. The ambulatory refilling was done either alternately on the two sides or simultaneously, depending on the conditions in each patient. The authors state that the results of the ambulatory pneumothorax treatment were satisfactory.

**Shortening and Shifting of Sleeping Period.**—Stöckmann observed on several students that a shortening of the sleeping period but at the same time a shifting so that it was completed before midnight had a favorable effect. Fatigue and nervousness disappeared and mental alertness increased. The reports indicate that the sleep generally lasted from 7 p m to 11 20 p m. Up to the present, observations have been made on fifteen persons (adolescents and adults) all of whom found the sleeping period between 7 p m and 11 20 p m most suitable.

80:447-482 (March 24) 1933

- Fever and Problem of Combating It. E Grafe—p. 447  
\*Abduction Splint Treatment in New Shoulder Injuries C Mau—p. 451  
Clinical Investigations on Read's Formula for Basal Metabolism H Berthieu—p. 453  
\*Disturbances Following Endolumbar Administration of Acriflavine Hydrochloride G Eigler and W Geisler—p. 454  
Problem of Chronic Rheumatism O Meyer—p. 455  
Differential Diagnosis Between Muscular Indurations and Latent Phlebitis of Deep Veins of Leg M Lange—p. 456  
Sodium Salt of Barbituric Acid Derivative as Anesthetic in Obstetrics and Gynecology E Lissard—p. 457  
General Course and Particular Manifestations of Acute Appendicitis A Krecke—p. 458

**Abduction Splint Treatment in New Shoulder Injuries.**—Mau deplors that periarthritis humeroscapularis is not yet recognized by many practitioners and states that incorrect treatment may result in an irreparable limitation of the movement of the shoulder, while a correct early treatment makes it possible to prevent such conditions of contraction. The main object is to bring the arm as soon as possible, into the abduction and external rotation position, and to secure immobilization for arm and shoulder by fixing the arm in this position by means of a special splint. The author describes and illustrates the splint and its application. The splint should not be removed until active lifting of the arm to the same extent as the healthy one becomes possible. This requires, as a rule, several weeks. If the splint is removed too early, the movement may become impaired again. In the first few days following the removal of the splint the patient should be carefully watched and, if necessary, the splint should be put on again. After the original pains have disappeared adjuvant measures, such as massage and application of heat, may be instituted while the arm is in the abducted position, but these measures are not the main indication and are not absolutely necessary. A sufficiently prolonged and uninterrupted abducted position and active movement as soon as this becomes necessary are the most important factors.

**Endolumbar Administration of Acriflavine Hydrochloride.**—Eigler and Geisler cite the clinical histories of three patients with meningitis showing that the endolumbar administration of acriflavine hydrochloride involves great danger. They do not deny that frequently the suppurative processes of the spinal cord are favorably influenced by this treatment, but this favorable influence does not compensate for the serious paralyzes that they have observed. Two monkeys inoculated with meningitis and then treated with endolumbar administration of acriflavine hydrochloride likewise developed paralysis. On the basis of these experiences the authors warn against the endolumbar injection of this preparation in patients with meningitis. Moreover, postmortem examinations revealed that the acriflavine hydrochloride had advanced only to the base of the brain, which indicates that rhinogenic and otogenic meningitis cannot be influenced by the endolumbar administration. The authors think that, besides the surgical interventions, the frequent and copious evacuation of the lumbar canal promises the best therapeutic results in acute suppurative meningitis.

**Zeitschrift f Geburtshülfe u. Gynäkologie, Stuttgart**

104 367-538 (Feb 28) 1933

- So-Called Myoblastic Tumors R. Meyer—p 367
- Etiology and Therapy of Pregnancy Anemia Resembling Pernicious Anemia. A. Pohl—p 386
- Pathology and Therapy of Pregnancy Anemia Resembling Pernicious Anemia. J. Batsweiler—p 397
- Prospects of Conception Following Salpingostomy H. Dworzak and O. Hajek.—p 418
- Estimation of Spontaneous Delivery in Primiparas with Narrow Pelvis on Basis of Greatest Number of Uterine Contractions. E. Frey and P. Bechter—p 432
- Significance of Developmental Anomalies of Female Genital Organs in Obstetrics Z. von Szathmari—p 454
- Pigment Formation in Skin of Ovarian Dermoids During Gravidity K. Fischl—p 486
- Extra Uterine Endometrioid Proliferations as Cause of Diagnostic Mistakes H. O. Kleine.—p 490
- Treatment of Carcinoma of Corpus Uteri. E. Zweifel.—p 498

**Anemia of Pregnancy Resembling Pernicious Anemia**

—Pohl calls attention to the fact that in normal gravidity the development of a slight anemia can be observed. He thinks that the anemia is not merely simulated by a hydremia but is the result of an increased disintegration of the blood. If an impairment of the bone marrow existed before the beginning of the pregnancy, an anemia of a somewhat pernicious form may eventually develop in the course of the pregnancy. Impairment of the bone marrow may be caused by a rapid succession of pregnancies, by infectious diseases and by blood diseases (essential hypochromic anemia). It is possible that an anemia of pregnancy resembling pernicious anemia develops from a pregravidic essential hyperchromic anemia. A case history seems to indicate this. During the puerperal period, treatment with liver preparations hastens recovery from the anemia that resembles the pernicious form. Whether this therapy will also be effective during pregnancy has yet to be proved with the new preparations, however the results with fresh liver have been encouraging. If shortly after delivery, the woman's life becomes endangered, blood transfusion becomes necessary.

**Anemia of Pregnancy Resembling Pernicious Anemia**

—Batsweiler shows that anemia of pregnancy is probably a toxicosis of pregnancy, the morphologic blood picture of which frequently resembles that of pernicious anemia, whereas in other cases it resembles chlorosis. On this basis he differentiates two types: (1) the hyperchromic type which resembles pernicious anemia and in which the color index is over 1, and (2) the hypochromic type, which resembles chlorosis and has a color index of less than 1. The blood picture of both types shows pronounced oligocythemia, reduction of the hemoglobin and occurrence of young forms and of degenerative manifestations. The other symptoms resemble those of the toxicoses of pregnancy. The symptomatology differs from pernicious anemia in the following points: 1 The bilirubin content of the serum is normal or only slightly increased. 2 Urobilinogen is present in the urine rarely or not at all. 3 The gastric secretion is normal, achlorhydria occurs rarely and if it does, it disappears again during the process of recovery. 4 Following delivery and the puerperal period, recovery is possible. 5 There is no relapse outside of the gestation period, and relapses are rare during this period. From the therapeutic standpoint it is important that a considerable improvement can be effected during pregnancy with the aid of liver and stomach preparations, making it possible to bring the pregnancy to term. In the treatment of the hypochromic type, iron preparations are helpful in compensating for the iron deficiency. The prognosis of anemia of pregnancy is favorable, provided it is recognized and properly treated during the early stage. Interruption of pregnancy is not necessary, for with the aid of liver, stomach and iron treatments, and with blood transfusion, it has been possible to reduce the formerly high mortality to 15 per cent and to produce mature and viable children.

**Prospects of Conception Following Salpingostomy**

—Dworzak and Hajek consider the operative opening of the uterine tubes that have been closed by inflammation an ineffective treatment of sterility. A study of the case histories of fifty-two women who underwent this operation revealed that fifty-one had not become pregnant, in spite of a sincere desire for children, and that in one woman the intervention had led to tubal pregnancy. On the basis of this observation, they

abandoned this treatment of sterility, and they are inclined to believe that unfavorable results and dangerous complications are more frequent in salpingostomy than is generally reported. They think that statistics on a larger material will have to prove whether it is justifiable to resort to salpingostomy in the treatment of sterility, or whether the failures and complications are more frequent than the favorable results.

**Extra-Uterine Endometrioid Proliferations** —Kleine points out that extra-uterine endometrioid heterotopies may lead to diagnostic mistakes, as shown by the following observations: 1 An endometriosis of the appendix that was accompanied by other extra-uterine endometrioid proliferations was diagnosed as chronic appendicitis. 2 An endometriosis of the right round ligament was treated for years as inguinal hernia. 3 Three cases of endometriosis in the posterior vaginal wall were thought to be of a carcinomatous nature. In one of these the endometriosis had developed following vaginal total extirpation of the uterus. 4 A nodule formation under the epidermis in a laparotomy scar following cesarean section was recognized as endometriosis during the histologic examination. 5 In a woman, aged 40, a constricting endometriosis of the vagina, located on the posterior wall in the middle of the vaginal tube, that is, unusually low, was considered for several years as probably of tuberculous character.

**Zeitschrift für urologische Chirurgie, Berlin**

38 301-476 (March 11) 1933

- Testis Incarcerated in Inguinal Canal as Complication of Cryptorchidism I. L. Bregadse—p 301
- Pyelography on Contrast (Metal) Graph Net in Displacement of Kidneys W. A. Stogow—p 304
- Clinical and Experimental Investigations on Choice of Contrast Medium in Retrograde Pyelography Particularly on Use of Thorium Dioxide Preparation. F. Sartorius and H. Viethen—p 312
- Fat Substitution of Atrophic Kidney M. Krymholz.—p 343
- Procedure in Treatment of Hypertrophy of Prostate. W. Rabinowitsch.—p 361
- Muscular Changes in Renal Pelvis and Ureter in Stasis of Descending Urinary Passages. L. Löffler—p 384
- Permissibility of Introduction of Gas into Renal Pelvis and into Bladder H. J. Spohl—p 404
- Influence of Abdominal Muscular Pressure on Vesical Pressure. O. Karschulin—p 421
- Interpretation of Roentgen Picture of So-Called Accessory Urethra. E. Langer and C. Engel—p 428
- Congenital Hydronephrosis and Polycystic Malformation of Kidney A. Thiemann.—p 433
- Total Pelvic Renal Transition of Contrast Medium in Subcapsular Hemorrhagic Cavity H. Zielke.—p 445

**Contrast Mediums in Retrograde Pyelography**

—The many different contrast mediums that have been recommended for retrograde pyelography and the diversity of opinions about the value of the different substances induced Sartorius and Viethen to make a systematic study of their suitability. They reach the conclusion that the modern complex iodine compounds, such as Iopax, insure a painless, safe and entirely nonirritant pyelography. For this reason they are at present accepted as the best contrast mediums for retrograde pyelography. The authors further show that a colloidal thorium dioxide preparation offers the same advantages as the complex iodine preparations, besides still giving a good roentgen shadow at a dilution of from 1:1 to 1:2, and therefore being much cheaper than the complex iodine compounds. Its disadvantage is its storage capacity in the renal region, which is not likely within the limits of permissible pressures of injection but is possible in certain disease conditions of the renal pelvis and of the renal tissues and may cause the erroneous diagnosis of renal concretions. In interpreting pyelograms that have been made with the thorium dioxide preparation, the possibility of the storage of renal extravasates should therefore always be considered.

• **Treatment of Hypertrophy of Prostate**—Rabinowitsch discusses various diagnostic methods: (1) rectal palpation of the prostate and its surroundings, (2) determination of the residual urine, (3) cystoscopy, (4) roentgenologic demonstration of the urinary bladder and of the kidneys either by means of contrast filling or, in some cases, by means of pneumoradiography, (5) functional examination of the kidneys. The latter is done by means of the dye test, the water test, the concentration test, the urea tolerance test according to MacLean and eventually the determination of the urea and of the rest nitrogen in the blood. The author makes, as a rule, all

these tests because the partial functions of the kidney may be impaired in varying degrees. With the aid of the various tests, it is possible to obtain a clear picture of the condition of the prostate and of the urinary apparatus. The local examination should of course be preceded by a general examination in which the cardiac function and the blood pressure are given consideration, and the therapeutic procedure should be decided on the basis of the local and the general examinations. The author considers prostatectomy the method of choice. In patients who are in fair general condition, the entire procedure can be done at once, whereas two interventions are advisable in other patients. He describes suprapubic cystotomy which he performs under spinal anesthesia. The unburdening of the urinary apparatus produced by suprapubic cystotomy may have an unfavorable effect on the kidneys and also on the heart and the vascular system. For this reason the circulation should be given special attention in the interval between the cystotomy and the second part of the operation, namely the prostatectomy. Other factors that should be considered during this interval are strengthening of the organism, undisturbed discharge of the urine and treatment of cystitis, which exists almost invariably. The author performs prostatectomy likewise under spinal anesthesia. In patients in whom a suprapubic cystotomy cannot be done, he advises operation in three stages: first, vasectomy and introduction of the permanent catheter, later suprapubic cystotomy, and, finally, prostatectomy. Other treatments discussed are permanent catheterization, vesical fistula, and injection of a combination of a solution of pepsin and Pregl's solution of iodine—according to Payr's method. He advises treatment by permanent catheterization for old people who are not likely to tolerate a surgical intervention, for patients with serious cardiac and circulatory disturbances, and for patients in whom acute congestion of the prostate causes acute stasis of the urine. He recommends a permanent vesical fistula for patients in whom prostatectomy is contraindicated and in whom catheterization is impossible on account of urethral stricture. He has found intraprostatic injections of the pepsin and iodine solutions valuable in combination with catheterization.

**Introduction of Gas into Renal Pelvis and Bladder.**—Improvement of the asepis in suprapubic cystotomy, making cystotomy possible in certain cases and demonstration of ray permeable bodies in the bladder the ureter or the renal pelvis are, according to Spörl the main indications for gas inflation. Since a number of authors have advised against it on the basis of the danger of gas embolism the author decided to investigate whether this objection is justified. He concludes that, provided a correct technic is employed, introduction of gas into the renal pelvis and bladder is without danger. The precautionary measures consist (1) in the use of oxygen instead of air, (2) in the control of pressure by watching the backward dart of the plunger in fractional injection, (3) in limiting the amount of oxygen for filling the bladder to 150 cc., and (4) in avoiding gas inflation in patients in whom the circulation is impaired as the result of a weakened heart or of a pulmonary disorder.

### Zentralblatt für Chirurgie, Leipzig

60:785-848 (April 8) 1933

- \*Surgical Intervention in Cerebral Gliomas. E. Heymann.—p. 786  
Gastric Lipoma and Peptic Ulcer. R. Burmeister.—p. 793  
Fibromatous Appendicitis and Invagination of Appendix into Cecum. S. Heinsheimer.—p. 795  
Osteosynthesis After Sven Johansson in Treatment of Fractures of Neck of Femur. F. Krauss.—p. 799  
Preoperative Treatment of Gastric Carcinoma with Hydrochloric Acid. R. Friedrich.—p. 801  
Extraperitonealization of Drain in Difficult Closure of Duodenal Stump. W. Burk.—p. 804

**Cerebral Gliomas.**—Of 800 cases of brain tumor in which Heymann operated in the last ten years, 250 belonged to the glioma class. According to the author, the limitations of a classification of the type of Bailey-Cushing or of del Rio Hortega are that they are based solely on histologic grounds. The classification of P. Schwartz and the author's classification are based on the gross external features of the growth and are therefore of greater assistance to the clinician. The gliomas of the cerebellum are not included here, since they offer little difficulty as to localization, spread and clinical characteristics. Their

prognosis is likewise much better than that of cerebral gliomas. The author suggests a division into three distinct groups: (1) gliomas of the old, (2) polar gliomas and (3) gyrus gliomas. Gliomas of the old begin to manifest definite localizing symptoms in the fifth or sixth decade. A careful history usually reveals that years previously the patient had an epileptic seizure, a hemiplegia or psychic disturbances, and only exceptionally other than fleeting localizing symptoms. Prognosis is bad because the existence of the tumor is not recognized until some terminal event appears, the choked disk, headache and vomiting being usually overlooked until shortly before the end. The outlook for an operative intervention is hopeless in these cases and one should not yield to the temptation of doing a decompression operation since the resulting edema of both hemispheres can no longer be influenced. Tumors with mature neuroglia cells and rich in fibrous tissue offer a somewhat better prognosis. Such patients may survive for from several months to two years after the decompression operation. Polar gliomas are divided into those developing (a) in the occipital lobe, (b) in the temporal pole and (c) in the frontal pole. The polar gliomas are more amenable to surgical removal because they are more superficial. The prognosis, however, depends to a great extent on whether the tumor grew from the periphery inward or in the reverse order. Those of the frontal lobes give the more favorable prognosis. Resection of one frontal pole, especially of its basal portion, is well borne and offers a fair prognosis. The edema which sets in as a rule about two years later because of a recurrence, can be controlled by irradiation for months or years. The rest of the polar gliomas offer a bad prognosis. They are characterized by immature cells; they grow from within outward, and they give rise to symptoms surprisingly late. The temporal gliomas are practically all hopeless. The only exception is formed by a tumor located in the periphery of the lobe and confined to one convolution. The results after resection are at times quite striking. Recurrence, however, will not fail to take place from six to nine months later occasionally after a few weeks. The occipital gliomas offer the least difficulty to removal but are most malignant and recur more quickly than any other type of glioma. In the third group the author places tumors limited to a single convolution—gyrus gliomas. They are easily removed without much attending bleeding but recurrence will take place a few months after the operation. There are still other gliomas not included in the three groups described, such as those developing in the vicinity of the great nuclei and displaying a tendency to grow into the third ventricle, but these because of their location, are not operable. In the author's experience, irradiation not infrequently seemed to stimulate the growth of the tumor.

### Zentralblatt für Gynäkologie, Leipzig

57:609-672 (March 18) 1933

- Fetal Electrocardiogram. H. Steffan and E. Strassmann.—p. 610  
\*Extraction of Posterior Arm in Difficulties of Shoulder Presentation with Result of Delivery of Living Child. M. Henkel.—p. 615  
Delivery in Cervical Cesarean Section. E. Fuppel.—p. 617  
Interruption of Pregnancy in Large Gravitation Abscess Following Tuberculosis of Spinal Column. H. Hellendall.—p. 620  
Conservative Therapy of Uterine Perforations in Abortion. Gertrud Bardenheuer.—p. 625  
Cause of Beginning of Birth. S. S. Barjaktarović.—p. 628  
Extracts of Pineal Body. Experimental Investigations and Therapeutic Possibilities. K. Burger.—p. 634  
Treatment of Essential Leukorrhea in Virginal Women. W. K. Frankel.—p. 638  
New Shell Pessary. R. Falk.—p. 639

**Extraction of Posterior Arm in Shoulder Presentation.**—Since the literature reports no case in which drawing down the arm resulted in the delivery of a living child, Henkel calls attention to a case of his observation in which this proved possible. The woman in question had a normal pelvis but the fetus was large and was in the second postero-occipital position. When asphyxia developed and necessitated the rapid termination of the delivery, an attempt was made to engage the head with the aid of Naegele's forceps. This attempt failed, but Kielland's forceps accomplished the engagement though not the rotation of the head. Naegele's forceps were again employed and rotation of the head was easily obtained. Further extraction was again impeded because it was impossible to bring

the shoulder into the pelvis. For this reason the obstetrician introduced the left hand and drew down the right arm. After that the delivery offered no further difficulties, except that for a few days the right arm of the new-born infant showed a slight paresis. This case shows that extraction of the posterior arm is a manipulation that promises success in the difficult delivery even of the living child. In the reported case the pelvis was normal and the child oversized, but the same difficulties may develop with a child of normal size when the maternal pelvis is narrow, and the author thinks that lowering the arm should be tried in such cases.

57 673 720 (March 25) 1933

- \*Treatment of Puerperal Pyemia with Prolonged Intravenous Infusions of Dextrose Alcohol. B. Zondek and K. Grunsfeld—p. 674
- Spontaneous Recovery of Puerperal Woman Following Twenty Two Attacks of Chills. E. Scipades—p. 681
- Etiology of Ectopic Pregnancy. P. W. Siegel—p. 686
- Two Rare Cases of Tubal Gravidity. M. Berger—p. 689
- Roentgenologic Diagnosis of Extra Uterine Gravidity in Second Half of Pregnancy. H. Nolle—p. 693
- Diagnosis and Therapy of Advanced Extra Uterine Gravidity. A. Kuncz—p. 696
- \*Abortive Measures and Intra Uterine Interventions in Ectopic Pregnancy. M. Magid and N. Pantschenko—p. 705
- \*Automammization by Mud Packs. W. I. Sdrawomysloff—p. 712
- Forceps to Facilitate Introduction of Radium Containers. E. Coester—p. 716

**Puerperal Pyemia**—Zondek and Grunsfeld point out that neither serotherapy nor chemotherapy has accomplished the desired results in puerperal fever. Ligation of the veins can be employed only in rare cases. The main object in the treatment of septic infections is to increase the resistance of the organism. Since the oral application of strengthening substances is usually difficult because the patients lack appetite, the authors decided on the continuous intravenous infusion. As experience has proved that alcohol is helpful in septic infections, they administer a solution of dextrose and alcohol. On the first day, only a 5 per cent solution of dextrose is administered, and 0.5 per cent alcohol is added later, and the percentage gradually increased to 2. The drop infusion is arranged in such a manner that 100 cc is administered hourly. This quantity does not overtax the circulation, but after a few days it should be slightly reduced. The authors never experienced an embolism, and fifteen of the twenty women they treated in this manner recovered. Since all of the twenty cases were rather severe, they consider the mortality rate of 25 per cent not high. The solution of dextrose without alcohol but with cardiac stimulants instead has been found helpful after operations. Following great loss of blood, the authors prefer the solution of dextrose to physiologic solution of sodium chloride.

**Intra-Uterine Interventions in Ectopic Pregnancy**—The observations made by Magid and Pantschenko are summed up as follows: 1. Attempted abortion is not entirely rare in ectopic pregnancy. In the material studied it amounted to 7 per cent of the total number. 2. This mistake is generally made between the sixth and eighth weeks of pregnancy. For this reason it is advisable not to interrupt the pregnancy before this time. 3. The attempted abortion does not make the prognosis of ectopic pregnancy less favorable as far as operation and infection are concerned. This is owing to the fact that the intervention is usually done by a physician that is, under aseptic conditions. On the other hand, the uterine cavity does not contain material that could become infected (no ovum). 4. An attempted abortion masks the clinical aspects of ectopic pregnancy to such an extent that a correct early diagnosis becomes difficult. 5. The pregnant tube does not react to the intra-uterine intervention, and the rupture evidently is caused only by the growing trophoblast. 6. In order to differentiate an ectopic pregnancy from an incomplete abortion, it is advisable to resort to an exploratory scraping of the uterus. The presence of villi of the chorion has a certain significance, as it excludes an ectopic pregnancy. One should not forget that extra-uterine and intra-uterine pregnancies may concur.

**Automammization by Mud Packs**—Sdrawomysloff maintains that the close relations between the internal genitalia of women and their mammary glands have been proved clinically and experimentally. Besides secreting milk the mammary gland produces a hormone, the so called mammin, which is an

antagonist of one of the ovarian hormones, folliculin, which is related to some other hormones. It is well known that during the lactation period menstruation generally ceases and that, by the systematic administration of the mammary hormone, it is possible to produce cessation of the menses. Besides its inhibitory influence on the ovary, the hormone of the mammary gland also has a direct action on the uterine musculature. It increases labor pains and stimulates the contraction of the uterus following delivery. The manifold connections of the mammary glands with the internal female genitalia and the incomplete identity of the mammary hormone obtained from animals with that produced in women led to efforts to increase the formation of the hormone in the organism itself, that is, to automammization by means of mud packs on the breasts. This measure was employed in sixty-seven patients who had prolonged menstruation or metrorrhagia. The mammary gland was covered for from twelve to fifteen minutes with hot mud with a temperature of from 48 to 52 C (118.4 to 125.6 F). These mud packs of the breasts were usually combined with mud packs covering the body from the waist to the middle part of the thighs. After a certain number of treatments however, the packs were applied only to the mammary glands. The number of applications varied between six and twenty-four, the average being twelve. In fifty-seven cases (85 per cent) the treatment was more or less effective, and the authors recommend these mud packs for women with profuse menstruation, in many forms of fibromatosis and in cases of fibroma of the uterus.

### Bibliotek for Læger, Copenhagen

125: 103 142 (March) 1933

- \*Sugar Threshold and Kidney Function. C. T. Bjerring and P. Iversen—p. 103
- Investigations on Kidney Function in Eclampsia and Related Disturbances of Pregnancy. A. Olsen—p. 133

**Sugar Threshold and Kidney Function**—Bjerring and Iversen show that one threshold must be considered for the rising and another for the falling blood sugar curve. The sugar threshold is defined as that dextrose concentration in the blood (glomerulus filtrate) at which the dextrose concentration in the reabsorption fluid changes from higher than that of the blood to lower, or vice versa. They find that the reabsorption of dextrose decreases only relatively with the rising dextrose concentration in the blood. There is a linear correlation between the dextrose percentage in the reabsorbed fluid and the dextrose percentage in the blood (or filtrate). With the same blood sugar the kidneys reabsorb a thinner solution of dextrose when the blood sugar curve falls than when it rises. The dextrose percentage and the total elimination of dextrose in the urine depend on the height of the blood sugar and the concentration index. If the latter is kept constant the dextrose percentage in the urine can be made to run parallel with the dextrose percentage in the blood. In acidosis the tubuli are intoxicated and the effect is the reabsorption of a thin solution of dextrose. If the dextrose percentage in the reabsorbed fluid continues for a long period of time near the dextrose percentage in the blood the dextrose percentage of the urine corresponds to it. With increasing quantities of eliminated dextrose, the concentration index drops.

### Ugeskrift for Læger, Copenhagen

95 365 394 (March 30) 1933

- Allergic Disease Especially in Children and Particularly Asthma and Eczema. G. R. Ulrich—p. 365
- \*Experiences with Phenobarbital Treatment of Whooping Cough. A. Brems—p. 369
- Content of Quinine Resistant and Atocyl Resistant Lipases in Blood from Normal Persons According to Rona. K. Germer—p. 372

**Whooping Cough**—Brems finds that phenobarbital sodium in a 0.5 per cent solution usually in doses of 5 cc from three to six times daily, in most cases of whooping cough lessens the frequency and violence of the attacks and vomiting and the exhaustion. The reaction was good in about twenty out of sixty-four children and excellent in about thirty. The only unfavorable by-effects were an exanthem in seven cases and notable dulness in three. In several cases which showed signs of becoming grave the author gained the impression that the course of the disease was abortive after the administration of phenobarbital.





*Dray Lewis,*

PRESIDENT AMERICAN MEDICAL ASSOCIATION, 1933-1934





D CHESTER BROWN  
Danbury Conn



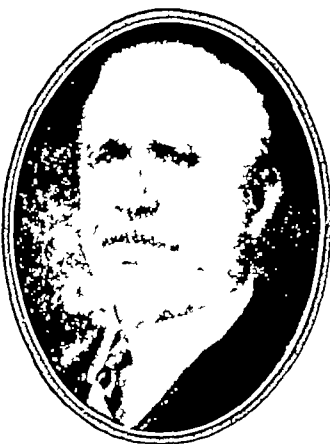
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## CONGENITAL HEART BLOCK

REVIEW AND REPORT OF THE SECOND CASE OF COMPLETE  
HEART BLOCK STUDIED BY SERIAL SECTIONS  
THROUGH THE CONDUCTION SYSTEM

WALLACE M. YATER, M.D.

JAMES A. LYON, M.D.

AND

PAUL E. McNABB, M.D.

Major M. C. U. S. Army

WASHINGTON, D. C.

In 1929 one of us<sup>1</sup> reviewed the literature on congenital heart block and reported the first case of complete heart block of congenital origin studied by serial sections through the conduction system. One other case of congenital heart block in which there was partial (2:1) block had been studied in this manner by Wilson and Grant.<sup>2</sup> The case to be reported is the second case of congenital, complete heart block studied histopathologically.

Congenital heart block is not common. In the review<sup>1</sup> in 1929 thirty cases were accepted from the literature as fulfilling certain diagnostic criteria. Many other cases were excluded because of insufficient proof either of their congenital origin or of the existence of heart block. The criteria of acceptance in certain instances may have been too rigorously applied. For instance Calandre's<sup>3</sup> case was excluded because there was a possibility that the block was due to vagus nerve action and not to some cause existing at birth, although the father of the patient who was first examined at the age of 21, stated that the pulse had always been slow. In this case examination of the heart was negative except for the bradycardia, and at times when the patient was in complete repose normal sinus rhythm was noted with the auricles beating at the same slow rate as the ventricles. As with many other uncommon conditions however it is probable that instances are noted from time to time which are not recorded. We are aware of a number of unreported clinical cases of congenital heart block seen by colleagues.

The criteria usually demanded for the diagnosis of congenital heart block are that the heart block must be proved by graphic methods in a relatively young individual, that the slow pulse must have been noted at a fairly early age and that there must not be a history of any infection which might cause the condition after

birth, such as diphtheria, rheumatic fever, chorea or congenital syphilis. The occurrence of syncope attacks at an early age is fairly good evidence of the existence of the heart block prior to the attacks. Such evidence was present in five of the accepted cases. The presence of signs of congenital heart disease, although not essential adds weight to the congenital origin of the condition, but one must remember that congenital heart lesions, such as patent interventricular septum, may be the seat of acquired endomyocarditis.

Since the review<sup>1</sup> in 1929 fourteen new cases from the literature, including the one here reported have been added to the list, making a total of forty-four accepted cases, which are given in the accompanying table. One of the new cases<sup>4</sup> was missed in the previous search of the literature and another<sup>5</sup> was reported while the paper was in press. Two cases previously reviewed and rejected because of lack of graphic proof of the existence of heart block are now accepted. These were of the two sisters reported by Aylward.<sup>6</sup> Aitken<sup>7</sup> has recently stated that complete heart block has since been demonstrated in these cases by electrocardiograms. It is now possible therefore to state positively that familial heart block occurs. Only one case reported as an instance of congenital heart block since the previous review has been rejected, this was case 1 of Aitken.<sup>7</sup> The possibility of acquired rheumatic disease as the cause of the heart block could not be excluded, and the pulse rate at 9 months was 100.

The causes of congenital heart block are theoretically some developmental defect of the bundle of His and prenatal endomyocarditis or syphilis involving the bundle. Thus far, only the former cause has been demonstrated by necropsy. Developmental defects sufficient to cause heart block were present in the five hearts examined. In the case of Wilson and Grant,<sup>2</sup> in which incomplete heart block was present examination disclosed complete atresia of the root of the pulmonary artery with a large patent ductus arteriosus and a common ventricle with only the rudiment of an interventricular septum in the form of a rounded prominence in the posterior wall. Histologic study showed the auriculoventricular node to be well developed but the bundle was composed mainly of two strands with numerous branches embedded in dense fibrous tissue. In the case of Perotti,<sup>8</sup> who was unable to obtain graphic records of the infant, who died three days after

<sup>4</sup> Sprague H. B. and White P. D. High Grade Heart Block Under the Age of Thirty. *M. Clin. North America* 10: 1235 (March) 1927.

<sup>5</sup> Giroux R. and Katsilabros L. Bradycardies congenitales par dislocation auriculoventriculaire, à propos d'un cas. *Paris med* 2: 30 (July 7) 1928.

<sup>6</sup> Aylward R. D. Congenital Heart Block. *Brit. M. J.* 1: 943 (June 2) 1928.

<sup>7</sup> Aitken Janet K. Congenital Heart Block. *Lancet* 2: 1375 (Dec. 24) 1932.

<sup>8</sup> Perotti, D. Blocco cardiaco congenito con vizio di conformazione del cuore. *Boll. d. Soc. med-chir. di Pavia* 3: 1 1928.

From the Georgetown University School of Medicine.

<sup>1</sup> Yater W. M. Congenital Heart Block. Review of the Literature. Report of a Case with Incomplete Heterotaxy. The Electrocardiogram in Dextrocardia. *Am. J. Dis. Child* 35: 112 (July) 1929.

<sup>2</sup> Wilson J. C. and Grant R. T. A Case of Congenital Malformation of the Heart in an Infant Associated with Partial Heart Block. *Heart* 12: 295 (March) 1926.

<sup>3</sup> Calandre L. Bradycardia congenita con blocco cardiaco intermittente. *Arch. cardiol. e hemat.* 2: 225 1921.

## Salient Data of the Forty-Four Accepted Cases of Congenital Heart Block

Case	Author	Sex*	Age When Proved	Age When Slow Pulse Was First Noticed	Malformation	Cardiac Enlargement	Grade of Auriculo-ventricular Block	Slowest Ventricle Rate	Cyanosis	Other Observations
1	van den Heuvel G C J Groningen 1-142 1908	♀	23 yrs	15 yrs	Patent interven-tricular septum	Marked	Complete	34	Slight	Attacks of syncope since age of 2 years
2	Fulton Z M K Judson C F and Norris G W Am J M Sc 140:339 1910	♂	22 mos	7 days	Patent interven-tricular septum	Slight	Complete	42	Absent	Father and older child had normal rhythm and not heart block as reported
3	D'Espine A and Cottin Mlle Acad de med Paris 74:292 1913	♂	8 yrs	8 yrs	?	Slight	Complete	20	Absent	One attack of syncope
4	Whitpham T R Brit J Child Dis 12:321 1915	♀	18 mos	18 mos	Patent interven-tricular septum	Slight	Partial 2 1	50	Absent	
5	Whitpham	♀	12 yrs	6 yrs	Patent interven-tricular septum	Marked	Complete	40	Absent	
6	Basch M H J A M A 70:257 (Feb 2) 1918	♂	13 yrs	12 yrs	?	Slight	2 1 and complete	37	Absent	Poor development dyspnea
7	Gorter E Nederl maandschr v verlosk 8:377 1919	♂	6 mos	6 hrs	?	?	Complete	60	Slight	
8	Rosenstock William Arch Pediat 37:103 1920	♀	10 yrs	8 yrs	Aortopulmonary patency	Marked	Complete	44	Absent	Blue for several hours after birth had had diphtheria
9	Carter F P and Howland J Bull Johns Hopkins Hosp 31:331 (Oct 1) 1920	♀	3 yrs	3 yrs	Patent interven-tricular septum	Slight	Complete	37	Absent	One attack of syncope at the age of 4 years
10	Smith S C J A M A 70:17 (Jan 1) 1921	♂	20 yrs	20 yrs	Pulmonary stenosis?	Slight	Complete	43	Absent	Attacks of syncope between the ages of 3 and 9 years no block on forced expiration
11	White P D Eustis R S and Kerr W J Am J Dis Child 22:299 (Sept) 1921	♀	4 days	8 hrs prenatal	Patent interven-tricular septum	Marked	Partial 2 1 and less	70	Slight	Mongolian idiosyncrasy marked right ventricular preponderance in electrocardiogram
12	White Eustis and Kerr	♂	6 yrs	5 1/2 yrs	?	Moderate	Complete	46	Slight on exercise	Wassermann positive
13	Bravo y Friaes J Arch españ de pediat 6:440 (Aug) 1922	♀	5 yrs	4 yrs	?	Slight	Complete	46	Absent	Fever at 4 months with cerebral irritation
14	Barbier Lebecq and Mouquin Bull Soc de pediat de Paris 20:11 1922	♂	1 1/2 yrs	1 1/2 yrs	Patent interven-tricular septum	Moderate	Complete	44	Absent	Infantile development bony anomalies
15	Meyer P Arch d mal du cœur 10:16 (Jan) 1923	♀	18 yrs	18 yrs	Patent interven-tricular septum pulmonary stenosis	Moderate	Complete	63	Marked	
16	Romberg, E O and White P D Boston M & S J 100:501 (April 3) 1924	♀	9 mos	9 mos	Patent interven-tricular septum	None	Complete	50	Slight on crying	
17	Nobécourt Rev gén de clin et de therap 38:200 1924	♂	10 mos	10 mos	Stenosis of pulmonary artery patent interven-tricular septum	Marked	Complete	60	Slight on crying	
18	Wilson J G and Grant R T Heart 1-2:293 (March) 1926	♀	14 mos	14 mos	Absence of inter-ventricular septum	Marked	Partial 2 1	60	Marked	Clubbed nose fingers toes necropsy histologic study
19	McIntosh Russell Am J Dis Child 34:963 (Dec) 1927	♀	7 mos	7 mos	Patent interven-tricular septum	Marked	Complete	57	Absent	Died at 8 months
20	Lukin A and Frey D I Arch Pediat 44:647 (Oct) 1927	♀	8 yrs	7 1/2 yrs	?	Slight	Complete	43	Absent	Influenza at 3 years weak heart diagnosed
21	Davis, Hart and Stecher R M Am J Dis Child 36:115 (July) 1928†	♂	13 mos	13 mos	Patent interven-tricular septum	Marked	Complete	40	Absent	
22	Gibson Stanley Am J Dis Child 34:1090 (Dec) 1927	♀	13 yrs	9 yrs	Patent interven-tricular septum	Slight	Complete	50	Slight	
23	Aldrich C A Am J Dis Child 34:1090 (Dec) 1927	♀	12 yrs	4 yrs	?	?	Partial 3 1	45	Absent	Sudden death at 13 years
24	Shapiro M J Minnesota Med 10:566 (Sept) 1927	♀	9 yrs	8 yrs	Pulmonary stenosis	Moderate	Partial 2 1	44	Marked	Sudden death
25	Sprague H B and White P D M Clin North Amer 10:1235 (March) 1927	♀	12 yrs	4 yrs	Patent interven-tricular septum	Slight	2 1 later complete	40	Absent	
26	Giroux R and Katsilabros L Paris med 60:30 1928	♂	10 yrs	13 mos	Patent interven-tricular septum	Slight	Complete	38	Absent	
27	Aylward R D Brit M J 1:943 (June 2) 1928	♀	6 yrs	Birth	?	Moderate	Complete	40	At times later disappeared	Electrocardiograms pre-sented by Aitken 1932
28	Aylward	♀	1 mo?	Birth	?	None?	Complete	40	At times	Electrocardiograms pre-sented by Aitken 1932
29	Haverschmidt J Nederl tijdschr v geneesk 1:1160 (March 3) 1928	♀	2 1/2 yrs	2 1/2 yrs	Patent interven-tricular septum	Marked	Complete	55	Present on crying	Electrocardiograms pre-sented by patient 28
30	Nissé B S Proc Roy Soc Med 1:438 1928	♀	7 yrs	23 mos	Patent interven-tricular septum	Moderate	Complete	48	Absent	Electrocardiograms pre-sented by Aitken 1932
31	Perotti D Boll d Soc med-chir di Pavia 3:1 1928	♀		1 to 3 days	Patent interven-tricular septum	Slight	No graphic records	60	Slight	Necropsy no histologic study
32	Fleming G B and Steven son M M Arch Dis Childhood 3:221 (Aug) 1928	♂	8 1/2 yrs	21 mos	Patent interven-tricular septum	Moderate	Complete	30	Absent	One attack of unconsciousness at 3 1/2 years
33	Fleming and Stevenson	♀	8 yrs	8 yrs	Patent interven-tricular septum pulmonary stenosis (?)	Moderate	Partial 2 1	45	Marked	Frequent attacks of fainting since patient began to walk clubbed fingers
34	Yater W M Am J Dis Child 38:112 (July) 1929	♂	2 days	2 wks prenatal	Unusual congenital anomalies	None	Complete	47	Marked	Multiple congenital anomalies necropsy histologic study
35	Nicolson Gertrude Shulman H I and Green Dorothy L Am J Dis Child 37:580 (March) 1929	♂	12 mos	12 mos	Patent interven-tricular septum	Marked	2 1 and complete	62	Absent	At 5 months pertussis? for 2 months with attacks of cyanosis
36	Anderson G H Northwest Med 28:227 (May) 1929	♂	7 yrs	7 yrs	Patent interven-tricular septum	Slight	Complete	46	Absent	

\* In this column ♂ denotes male ♀ female

† Previously reported in abstract Davis J H Am J Dis Child 34:133 (July) 1927

## Salient Data of the Forty-Four Accepted Cases of Congenital Heart Block—Continued

Case	Author	Sex	Age When Proved	Age When Slow Pulse Was First Noticed	Malformation	Cardiac Enlargement	Grade of Slowest Auriculo-ventricular Block	Slowest Ventricular Rate	Cyanosis	Other Observations
37	Brandenburg K. Med Klin 25 1404 (Sept 20) 1920	♂	4 yrs*	4 yrs	Patent interven-tricular septum	None	Complete	45	Absent	
38	Leach C B. Am J Dis Child. 29 131 (Jan) 1920	♀	10 yrs*	3.5 yrs	Patent interven-tricular septum and ductus arteriosus	Moderate	Complete	47	When cold	
39	Koenen H P J. Nederl tijdschr v geneesk 4 690 (Dec 6) 1920	♂	5 yrs*	Few mos	Patent interven-tricular septum	Moderate	Complete	32	Absent	
40	Selar M. Am Heart J 6 27 (Dec.) 1930	♂	14.67 yrs	14.67 yrs*	Patent interven-tricular septum	Moderate	Complete	47	Absent	At 4 years physician said heart affected
41	Abbott and Moffatt. Nelson Loose-Leaf Medicine 4: 207 1932	♂	20 yrs*	20 yrs*	Multiple	?	Complete	6	Present	Data not completely reported. Clubbed fingers. necropsy. no histologic study
42	Godfrey J W and Palmer R S. New England J Med 307: 575 (Sept 29) 1932	♂	9 mos	9 mos	Patent interven-tricular septum and ductus arteriosus	Marked	Complete	45	Absent	
43	Altken Janet K. Lancet 2 1375 (Dec 24) 1932	♀	16 yrs	12 yrs*	?	None	Complete	47	Absent	Case 1 not acceptable possibly rheumatic
44	Yater Lyon and McNabb, 1933	♂	2 mos	6 wks	Patent interven-tricular septum	Slight	Complete	47	At times	Death at 2 months of bronchopneumonia. necropsy histologic study

birth, there was complete absence of the membranous portion of the interventricular septum. In the case of Yater,<sup>1</sup> a most unusual condition existed. There was complete transposition of viscera except for the ventricles of the heart, and the auriculoventricular node was completely separated from the bundle of His by the central fibrous body as demonstrated in serial sections. The case of Abbott and Moffatt<sup>9</sup> was also one of unusual anomalies. There were a displaced left auricle, transposition of the great arterial trunks, double mitral ostium, cor biatriatum trilobulare, right conus stenosis and congenital pulmonary arteriovenous aneurysm. In the case here reported there was a large defect in the interventricular septum with practically complete absence of the bundle of His.

In the cases that did not come to necropsy the diagnosis, made either by the original authors or by us from the description, was patent interven-tricular septum in twenty-six. In two of these, pulmonary stenosis was also thought to exist and, in two others, patent ductus arteriosus. Pulmonary stenosis alone was diagnosed in one case, and communication between the aorta and pulmonary artery just above the aortic valve in another. In two cases cardiac murmurs that could not be interpreted were present. In six of the cases, clinical evidence of congenital heart disease other than the heart block or transient cyanosis was not found, and in three cases mention of the cardiac examination was not made.

In regard to the time of discovery of the slow pulse in the forty-four accepted cases, bradycardia was noted during the first year of life in thirteen instances, during the second year in five, between the second and tenth years in sixteen, and between the tenth and twentieth years in ten. In the first case of White, Eustis and Kerr<sup>10</sup> the fetal heart beat was noted to be irregular eight hours before birth. In Yater's case<sup>1</sup> the diagnosis

of congenital heart block had been made by the obstetrician two weeks before birth because of the slow rate of the fetal heart beat.

In the forty-four cases the degree of auriculoventricular dissociation was complete in thirty-five, partial in six, alternating between complete and incomplete in two and not determined in one. In the last case that of Perotti<sup>7</sup> graphic records were not made but because of the bradycardia from birth and the cardiac defect found at necropsy it was considered to be one of heart block. In the case of Sprague and White<sup>4</sup> partial heart block was present on the first examination but it was found to be complete eight months and again eighteen months later. The case of Smith<sup>11</sup> was unusual in that during forced expiration the heart block was replaced by sinus rhythm. Roentgenograms showed the position of the heart in forced expiration to be higher and more horizontal. Smith assumed that a few fibers of the bundle remained but that, except in the position of forced expiration there was an increased tension on them which prevented conduction. This was also one of the cases in which objective evidence of congenital heart disease was not found but the patient, a man, aged 20 had had syncopal attacks between the ages of 3 and 9 years.

The case of Bass<sup>12</sup> also was of special interest because at short intervals the electrocardiogram showed normal ventricular complexes preceded by normal P waves. The ability of the bundle of His to be activated at times by the auricular impulse indicates that in this case as in Smith's there was not a complete anatomic interruption of the bundle but that increased tension on it prevented its attenuated strands from conducting these impulses most of the time. If Calandre's<sup>2</sup> case were accepted, it might be explained on a similar basis.

Symptoms referable to the heart were present in very few of the cases. Cyanosis was entirely absent in

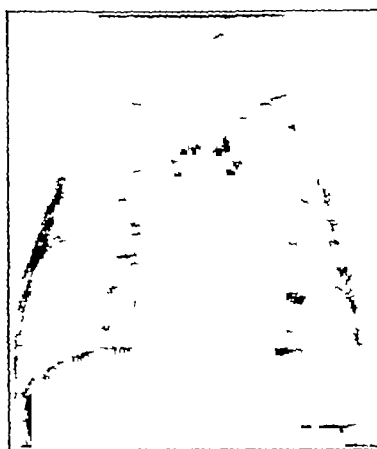


Fig. 1.—Appearance of chest.

9 Abbott and Moffatt, reported by Abbott, M. E. in Nelson Loose Leaf Medicine, section on Congenital Heart Disease. New York, Thomas Nelson & Sons, 4 207 1932.

10 White, P. D., Eustis R. S., and Kerr W. J. Congenital Heart Block. Am. J. Dis. Child. 22 299 (Sept.) 1921.

11 Smith, S. C. High Grade Heart Block. The Influence of Posture, Respiration and Exercise. J. A. M. A. 76 17 (Jan. 1) 1921.

12 Bass, M. H. Heart Block and Congenital Heart Disease in Childhood. J. A. M. A. 76 257 (Feb. 2) 1918.

twenty-four, slight or occasional in fourteen, and marked in only six. Clubbing of the fingers was noted in only three. Dyspnea and other evidence of congestive failure were not noted in any of the cases. The degree of cardiac hypertrophy was designated as none

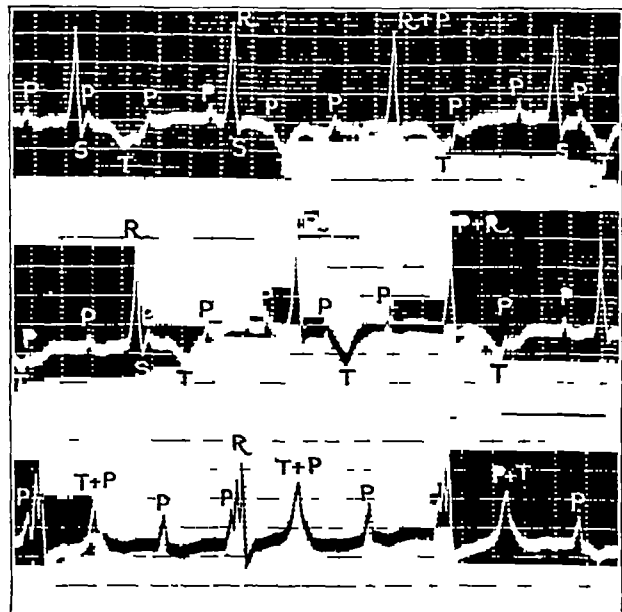


Fig 2—Complete heart block, with upright R waves in all leads and with T waves inverted in leads 1 and 2 and upright in lead 3

in five, questionable in three, slight in fourteen, moderate in eleven and marked in eleven. In some of the cases there was moderate acceleration of the rate of the auricles and ventricles with exercise, after the administra-

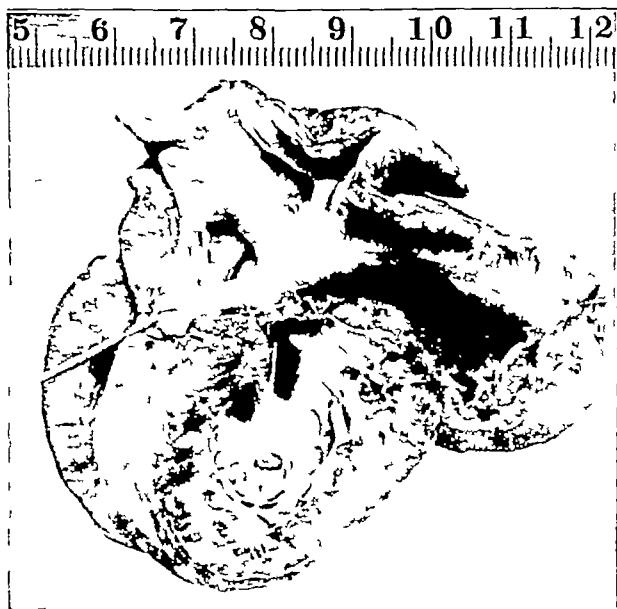


Fig 3—Right side of the heart opened showing the right auricle and ventricle. The defect in the interventricular septum is partially visible. The fossa ovalis is seen just above.

tion of atropine or during fever. A positive blood Wassermann reaction was obtained in only one case. Congenital anomalies in addition to the cardiac anomaly were present in four cases. Death was reported in eight of the forty-four cases. The deaths occurred at the

ages of 3 days, 18 days, 2 months, 3 months, 8 months, 9 years, 13 years and 20 years. Death was sudden in most of these cases but apparently was not due to congestive heart failure in any. The prognosis is dependent on the character of the congenital anomaly rather than on the presence of the heart block. It should, however, be considered serious in all cases, since a major developmental defect is probably always present to produce the auriculoventricular dissociation. The absence of a murmur does not rule out congenital heart disease, large septal defects may not present physical signs. Interventricular septal defects are not, however, entirely incompatible with fairly long life.

#### REPORT OF CASE 13

*History*—A boy, born August 16, 1932, was the mother's third child, both of the others had died in infancy, one of pneumonia, the other of meningitis. The patient weighed 5 pounds (2268 Gm) at birth. It was breast fed and took its feedings well. The mother noticed that the infant was dyspneic since birth. About five hours after birth it had an attack of cyanosis with increased dyspnea, lasting about fifteen minutes.



Fig 4—Left side of the interventricular septum, the walls of the heart having been removed. The defect is seen in the middle of the block of tissue removed for sectioning which has been replaced by the photograph. The aorta is seen in the upper left hand corner.

About one week before first admission to the Children's Hospital, September 19, it had a similar attack.

*Examination*—The child appeared fairly well nourished and not acutely ill. The skin and sclera were slightly icteric, and there was some cyanosis. The cervical and inguinal lymph nodes were palpable. The apex impulse was in the fifth inter-space in the usual location, apparently the heart was not enlarged. The heart rate was 48 per minute, and the rhythm regular. A loud systolic murmur was heard over the entire precordium, it was perhaps loudest over the lower portion of the sternum. The lungs appeared normal. The abdomen was soft and the liver just palpable. A patent interventricular septum was diagnosed. The infant remained in the hospital until September 28, no change occurring. The pulse rate varied from 48 to 55, the temperature being normal. An electrocardiogram was not taken at this time. Urinalysis was negative. The infant was admitted again, October 13. It had three attacks

13 Dr. Margaret Nicholson saw this patient in the outpatient department of the Children's Hospital and recognizing it as an unusual and very interesting case probably of congenital heart block due to patent interventricular septum made arrangements to have the patient admitted to the hospital. Dr. E. Clarence Rice performed the postmortem examination and kindly presented the heart to us for study.

of severe dyspnea in the interim. During these attacks generalized cyanosis was present, the infant holding its breath and vomiting. Some weight had been lost and a cough had developed. Examination revealed more cyanosis, injection of the pharynx and tonsils and slight enlargement of the liver. A roentgenogram of the chest (fig 1) showed slight enlargement

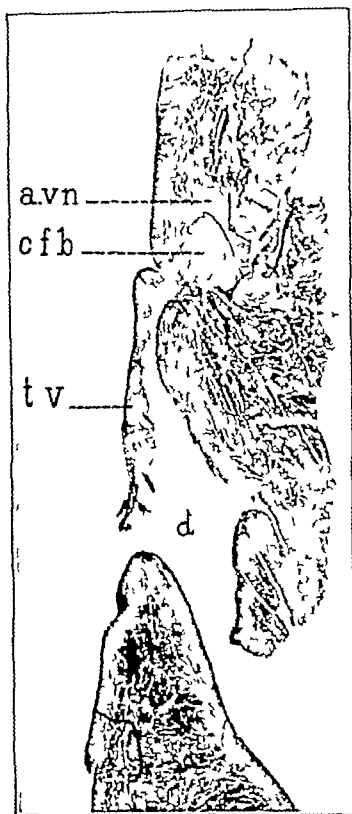


Fig 5—Section 260 showing the auriculoventricular node, *a v n*, lying on the attenuated central fibrous body *c f b* above the attachment of the tricuspid valve *t v* and near the upper right hand corner of the defect *d* reduced from a photomicrograph with a magnification of 14 diameters.

**Necropsy**—Postmortem examination revealed bilateral otitis media and some bronchopneumonia of the left lung. The heart weighed 45 Gm. There were large and small subepicardial hemorrhages at the root of the aorta, on the left ventricle and to a lesser extent on the right auricle and ventricle. The aorta and the pulmonary artery were severed too close to the heart to show whether the ductus arteriosus was patent. When the heart was opened in the usual way, an interventricular septal defect was seen in the upper middle part of the septum (figs 3 and 4). Except for this opening the entire septum was composed of muscle, a membranous portion being absent. The defect measured about 1.3 cm in two directions. It seemed to be divided into two parts, but this was only apparent and was due to a prominence in the middle of its lower edge, which served as a papillary muscle having chordae tendineae which went to both mitral and tricuspid valves. The foramen ovale was open in its lower part. The central fibrous body was somewhat attenuated, the interauricular septum being almost entirely composed of muscle. The mitral and tricuspid valves were attached close together in the upper border of the defect. The papillary muscles were normal except for the projection already mentioned which replaced the anterior papillary muscles of both ventricles. The aortic and pulmonary valves were normal. The measurements of the heart were as follows: depth, left ventricle, 3.9 cm, right ventricle, 3.9 cm, thickness, left ventricle, 0.5 cm, right ventricle, 0.3 cm, circumference of aorta, 2.3 cm, circumference of pulmonary artery, 1.5 cm, length, mitral valve opened, 3.8 cm, tricuspid valve opened, 3.7 cm.

**Histologic Examination**—Two blocks of tissue were removed from the heart for histologic examination. One was excised from the region of the sulcus terminalis at the mouth of the superior vena cava. This was found to contain a normal sinoauricular node. The other block was removed from the interauricular and interventricular septum, in the middle of which was the large patency (fig 4). This block contained the portion of the heart in which the main part of the auriculoventricular conduction system should be. The block was approximately a square when observed from either side, it measured 2 cm at its top and 2.2 cm at its side. The whole block was sectioned serially from left to right as the block was held with the right side forward, the block having been embedded in paraffin. In this way, the auriculoventricular node and the bundle of His would be cut transversely. The sections were about 8 microns thick. Every twentieth section of the 1,370 sections was mounted and stained by van Gieson's connective tissue stain, the intervening sections were mounted and stained as desired. The auriculoventricular node was found to be very atypical. It apparently began in its usual relationship to the mouth of the coronary sinus in the right auricle at about section 60, and was seen from that point until about section 380. The node was therefore above and to the right of the patency as the block was viewed from the right side. In this area the node slowly swelled and then became smaller again. Studied in transverse section in its thickest portion, i.e., about the middle, it appeared as a hump lying snugly on top of the attenuated central fibrous body and deeper within the interauricular septum than normally (figs 5 and 6). Its fibers were, as usual, smaller than those of the auricular myocardium and were compactly interlaced. It was not as vascular as usual, the main arteriole was largest near its beginning.



Fig 6—Section 260 showing the auriculoventricular node with higher magnification reduced from a photomicrograph with a magnification of 70 diameters.

From this point on, the sections did not reveal any evidence of a bundle of His until about section 700, when small portions of conduction tissue were seen embedded in the fibrous tissue in the apex of the projection in the middle of the lower edge of the defect. It was impossible to decide whether these groups of fibers communicated. From section 770 to 795 there was one main bundle of fibers in the lower part of the fibrous tissue,

and this gave rise to a bundle of fibers passing downward to the right in a space in the septal musculature. This bundle was small and deeply seated. It appeared to us as being an attenuated right bundle branch. About section 800 there was an expansion of the conduction tissue in the lower edge of the defect into a compact bundle of proper size for the bundle of His. The swelling produced a little hump into the patency and was more on the left than on the right side. It gave rise to a definite left bundle branch (figs 7 and 8) which had its usual subendocardial position. The swelling gradually dis-

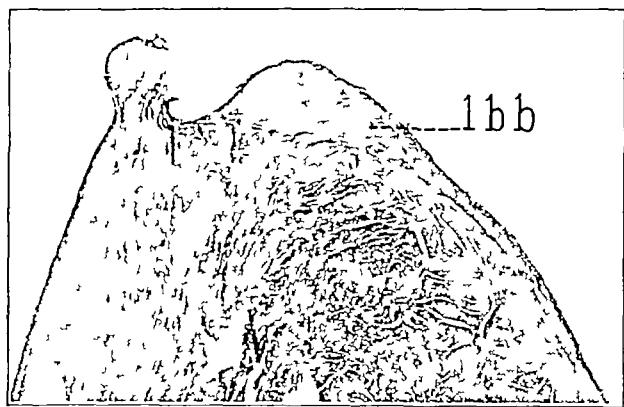


Fig 7—Section 840 showing the left bundle branch *l b b* in the lower edge of the interventricular defect reduced from a photomicrograph with a magnification of 14 diameters

appeared in further sections, but the left bundle branch was present in sections as far as section 1000 which was at the side of the patency nearest the anterior wall of the heart.

**Summary of Pathologic Examination**—The heart presented a large defect in the upper middle portion of the interventricular septum. In the middle of the lower edge of this defect was a muscular projection which served as the anterior papillary muscle for both ventricles. The central fibrous body was greatly attenuated and the membranous septum entirely missing. The auriculoventricular node was somewhat anomalous but was near its normal position. It did not, however, join with the bundle of His, which was practically absent, as though punched out with the defect. Small fragments of the bundle were located in the lower edge of the defect in the projection referred to. One of these gave rise to an attenuated right bundle branch. The left bundle branch was of normal size and appearance, it was located in the lower edge of the defect a short distance anterior to the right branch.

#### COMMENT

Some interesting points for discussion are presented by this case. One is concerned with the electrocardiographic picture. The QRS complex was of the supraventricular type, thereby indicating that the idioventricular impulses originated in the remnants of the bundle of His in the lower edge of the defect. The notching of the R wave in lead 3 was the only abnormality of the QRS complex. The large size of the T waves and their inversion in leads 1 and 2 were undoubtedly the result of the anatomic alterations in the conduction system. Whether the inversion of the T waves in leads 1 and 2 was due to the absence of the main stem of the bundle of His or to the lack of development of the right bundle branch is impossible to say. If one could say that it was due to the latter, it would be evidence that right bundle branch block is associated with this alteration of the T wave, since there is no reason to assume that there was any left ventricular strain in this case.<sup>13a</sup>

13a Barnes A. B. and Whitten M. B. Study of T Wave Negativity in Predominant Ventricular Strain, *Am. Heart J.* 5:14 (Oct.) 1929

The embryologic aspects of the case are important. Most cases of patency of the interventricular septum, including those with practically complete absence of the septum, are unassociated with defects of the conduction system. Monckeberg<sup>14</sup> studied the course of the main stem and its branches in a number of hearts with interventricular septal defects. Abbott<sup>15</sup> has summarized the reported observations of Monckeberg and other investigators as follows: "In most cases of septal defect examined, there was surprisingly little change in this normal arrangement (of the conduction system), the fibers streaming over the free border of the defect toward the apices of their respective ventricles." She explains this fact in the following way: "Investigations by Flack and Mall have shown that the interventricular septum is formed, not by a process growing upward from below, as Rokitsky supposed, but by a hollowing out of the spongy musculature of the embryonic ventricle to form the right and left chambers, the tip of the inferior septum, therefore, represents the wall of the lumen of the original cardiac tube, and this may account for the persistence of the bundle at this point in septal defects." Another important reason why so few cases of septal defect are unassociated with disturbances of conduction is the usual location of the defect. According to Abbott<sup>16</sup> again, we find that the defects are most often "at the base of the ventricular septum just anterior to the pars membranacea, and opening on the side of the right ventricle beneath the tricuspid leaflets, or sometimes into the floor of the right auricle. Less often, they are situated more anteriorly and open into the conus of the right ventricle. More rarely still, they are in the lower part of the septum."

We are not able to visualize the events that brought about the defect of the conduction system in our case. Since the portion of the conduction system existing in this heart is of the adult type, one may assume that the

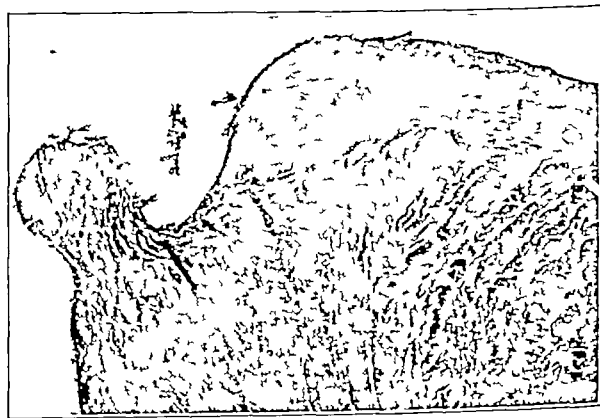


Fig 8—Section 840 showing the left bundle branch with higher magnification, reduced from a photomicrograph with a magnification of 70 diameters.

development of the system was normal except for some episode which removed the main stem. Since the membranous septum, through which the bundle of His normally passes to become the left branch, is also missing, the same episode was probably responsible for both

14 Monckeberg, J. G. *Herzmissbildungen. Ein Atlas angeborener Herzfehler in Querschnitten mit besonderer Berücksichtigung des Atrovventrikulärsystems.* Jena: Gustav Fischer, 1912.  
15 Abbott, Maude E. *Congenital Heart Disease.* Modern Medicine, Philadelphia: Lea & Febiger, 4: 693, 1927.  
16 Abbott, Maude E. *Congenital Heart Disease,* Nelson Loose-Leaf Medicine 4: 265, 1932.

deficiencies This episode occurred, no doubt, after the conduction system had become a separate structure. The fact that a case has been found in which the auriculoventricular node has been separated from the rest of the conduction system lends support to Mall's<sup>17</sup> conception that the conduction system is an embryonic rest which continues to develop independently and is not a new structure, as Retzer<sup>18</sup> thought.

#### SUMMARY

A review of the literature reveals records of forty-four acceptable cases of congenital heart block, including the present report. Certain criteria have been applied in collecting these cases. In only five cases have necropsies been performed, and in only three of these have histologic studies of the conduction system been made. A congenital defect of the bundle of His appears to be the cause of this condition in most cases. The most common clinical diagnosis is patent interventricular septum. In the case here reported, there was a defect in the interventricular septum with almost complete congenital absence of the bundle of His. The case is of great significance not only as a completely studied one of congenital heart block but also as an example of the rarest form of interventricular septal defect.

### CHONDROMALACIA OF THE PATELLA

FISSURAL CARTILAGE DEGENERATION, TRAUMATIC CHONDROPATHY. REPORT OF THREE CASES

JACOB KULOWSKI, M.D.  
IOWA CITY

Chondromalacia of the patella is characterized by a circumscribed primary degenerative fibrillation, fissuring and erosion of its articular surface. It occurs as a solitary local lesion or may be associated with other common causes of internal derangement of the knee joint. In either event, it has been shown to be a definite clinical entity. Pathologically, it is a localized form of arthritis deformans (so-called hypertrophic type). Further classification is superfluous because its somewhat variable manifestations are merely differences in degree. It was first clinically recognized by Büdinger in 1906 and again in 1908, who called it "fissures of the patellar cartilage." The more appropriate term chondromalacia originated with König in 1926. The foreign literature contains numerous references to this lesion, which have been apparently overlooked by many surgeons. It is evident that recognition of patellar diseases will help to clear up some heretofore obscure derangements of the knee joint. This paper is based on three cases of chondromalacia of the patella, presenting four lesions, which have been surgically treated in this clinic since July, 1932, and are the first clinical instances to be reported in the English literature. I shall consider the local clinical aspects of this condition and its more important broader significance relative to the pathogenesis of arthritis deformans.

Chondromalacia of the patella usually occurs in the young. The history is one of chronic disability with general symptoms of internal derangement of the knee

joint. Pain, as a rule, is referable to the patella or to its immediate vicinity. The intermittent hydrops attending exertion is due to the inevitable secondary synovial sequelae. Characteristically there is localized patellar pressure tenderness in acute flexion. Subpatellar crepitus is elicited by palpation or stethoscopic auscultation. The roentgenogram reveals little of definite value even when the ulceration is markedly advanced but is strongly suggestive when slight hypertrophic changes are noted about the joint, in addition to these signs and symptoms. Roentgen examination is, however, absolutely essential for a differential diagnosis. The arthroscope, an instrument devised for the direct visualization of joints and based on the principles of the cystoscope, should gain a wider clinical application. It is evident that an exact diagnosis can be made only when the patella is adequately exposed surgically.

Case 2 of this series was correctly interpreted before operation, and there are now several other patients under observation who are thought to be similarly affected. Figure 6 represents one case diagnosed as a localized patellar chondromalacia, which proved to be an advanced generalized arthritis deformans of the joint.

In mild cases the treatment consists of physical therapy and the avoidance of severe and unusual exertion. In those moderately advanced, the temporary application of a cast or brace. Operation is considered in severe lesions not affected by conservative measures. The surgical indication is excision of the involved area by curettage, or, as was

performed in three of our own series, a complete resection of the patellar articular surface with its contiguous bony layer, followed by an arthroplastic toilet. This more radical procedure is simple to execute and leaves a smooth patellar surface. Operation is contraindicated in old age. Associated loose bodies in themselves are not a primary indication for operation, their surgical removal is necessary only when they cause symptoms by engaging between the articular surfaces. Similarly, osteophytic outgrowths should be removed only if they interfere with motion, give rise to or are subjected to pressure pain or are on the point of becoming detached. All other secondary pathologic changes of the joints must be dealt with as seems necessary.

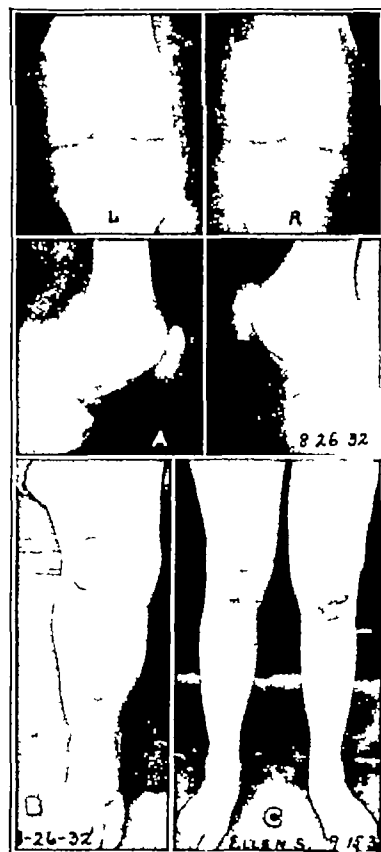


Fig 1 (case 1)—A preoperative appearance of both knees there is little to suggest the marked degenerative changes of the patellar cartilages B the abnormal lateral mobility of the patella C healed post operative medial patellar incision on left.

17 Mall F P. On the Development of the Human Heart. *Am J Anat.* 13: 249 (July) 1912.

18 Retzer R. Ueber die muskulöse Verbindung zwischen Vorhof und Ventrikel des Säugethierherzens, *Arch. f. Anat. u. Entwicklungsgesch.* 1904, p. 1.

From the Department of Orthopedic Surgery, State University of Iowa College of Medicine, service of Dr. Arthur Steindler. The term arthritis deformans, as used here, is generic and includes both great types of chronic arthritis, the hypertrophic and the atrophic.

It is important to stress certain general surgical principles with regard to the knee joint in order to avoid unnecessary repetition. A tourniquet facilitates exploration. The patient should ordinarily be placed on the operating table so that the bend of the foot piece of the table comes directly under the knee. Following

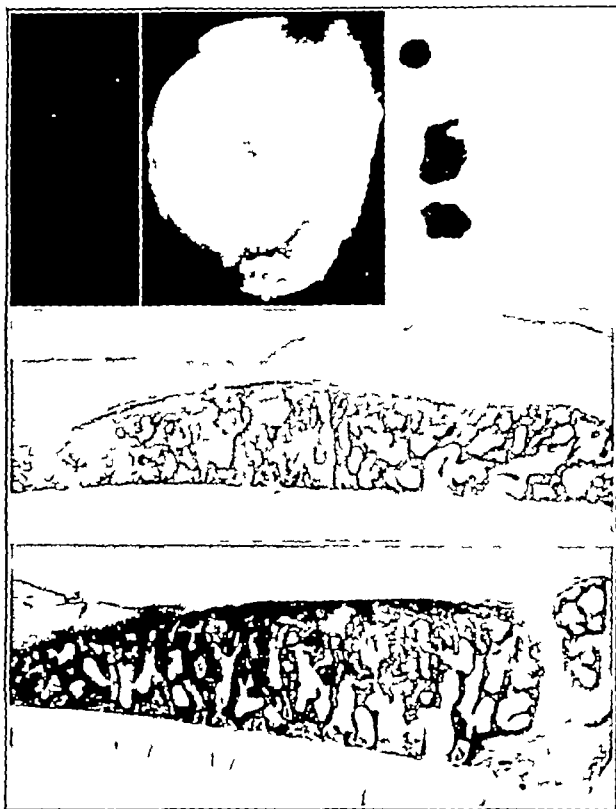


Fig. 2 (case 1)—Above, right articular surface and loose bodies removed from the right knee. Below, cross sections of ulcerated area in patella under low power.

the preparation of the limb, the foot of the table is dropped, and the leg falls with it. The operator sits on a stool and steadies the foot between his knees. It is best to employ the "general utility" medial patellar incision. The patella as well as the entire anterior part of the joint can then be everted and inspected. Probably the great majority of cases of internal derangement of the knee can be accurately diagnosed before operation, but it is in just those cases in which the cause of the derangement is doubtful that complete operative exposure is imperative. Long incisions also minimize the dangers of infection. If a complete exposure is not made, the less important, more obvious secondary joint changes will receive unwarranted attention. The most rigid aseptic technic must be observed. Towels are clipped to the skin wound edges. In order to minimize the exposure of the joint cavity, all the tissues are divided down to the synovial membrane in the entire length of the wound, and the synovial membrane is opened last. Great care must be exercised to avoid injury to the articular surfaces as well as to the ligamentous structures. The wound is closed in layers. Postoperative discomfort is minimized if all bleeding is controlled before closure. Drainage is not ordinarily indicated. A long leg cast or a posterior splint furnishes adequate temporary immobilization. Active motion and physical therapy must begin just as soon as the patient can tolerate it.

#### REPORT OF CASES

**CASE 1**—Ellen S., aged 21, single, white, a hotel clerk, seen, July 9, 1932, complained of a fairly constant dull aching bilateral patellar and general knee joint pain, which was aggravated by weather changes, bilateral looseness of the patellae (which had, however, never actually been dislocated), and intermittent swelling of the knees following exertion, which she had experienced "all her life." She was well developed and well nourished. All the joints were rather limber and allowed some hyperextension. The patellae were higher than the average normal and were loose, they exhibited definite pressure tenderness in flexion, subpatellar crepitus, and parapatellar soft tissue thickening but no increase in joint fluid. There was also present bilateral clinodactyly.

Roentgenograms (fig. 1) demonstrated similar changes bilaterally: loose bodies, suggestive variegated appearance of the patellae and slight hypertrophic changes at the articular margins of the femoral condyles. The true nature of the lesion was not suspected until arthrotomy was performed of the left knee, August 30, and of the right knee, September 21. Surgical pathologic changes were similar on the two sides except that they were more pronounced on the right. Rice bodies typical joint mice and secondary synovial thickening were observed, but the remarkable degenerative condition of the articular patellar cartilage impelled attention. Slight hypertrophic changes and a tendency to partial cartilage detachment was noted over the lateral femoral condylar surfaces, probably traumatic in origin, due to the abnormal lateral mobility of the patellae. A curettage was done on the left patella, but a com-

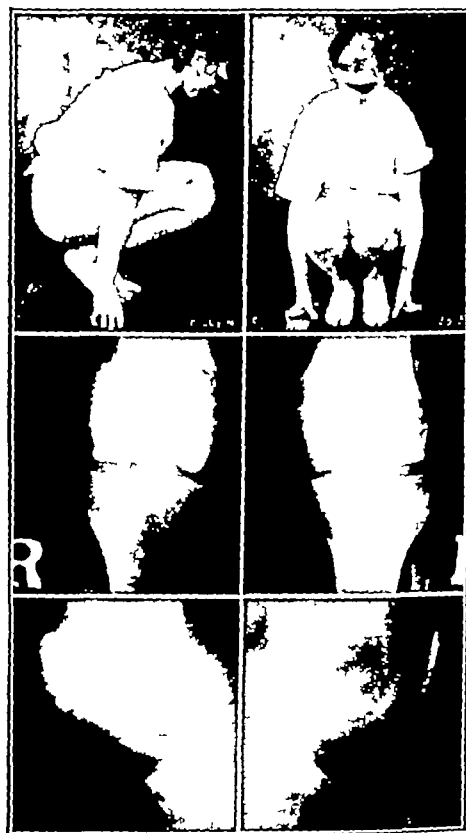


Fig. 3 (case 1)—Condition about six months after operation.

plete resection and arthroplasty followed on the right, after the patient's uneventful recovery, when she voluntarily submitted to the second operation. Because the patellae could not even at operation be easily dislocated laterally, a plasty was not considered necessary, but during closure of the wounds the deep structures were plicated. Three weeks after the last arthrotomy, some limitation of motion persisted on the left side.

which yielded to manipulation under anesthesia. Six months later the patient was symptom free and exhibited a bilateral normal functional range of motion (fig 3). The pathologic anatomy on the right side was as follows:

There was an area about three-fourths inch in diameter (fig 2) almost completely denuded of cartilage, exposing a

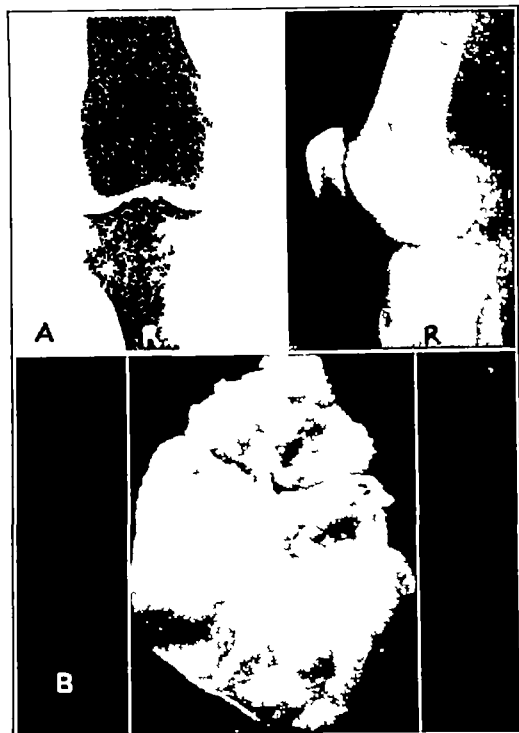


Fig 4 (case 2)—A preoperative condition, B right patellar articular surface.

smooth eburnated subchondral bony surface. A slightly bluish edematous granular appearance was imparted to such zones in the ulcerated region as were still covered in spots by very thin, highly degenerated cartilage. At the edematous margins of the crater, more or less prominent fissures radiated centrally. A marginal exostosis presented at the lower lateral border of the patella. Microscopically, the primary changes appeared as fissures and tears which vertically traversed the noncalcified cartilage to the zone of preparatory calcification at which point they frequently changed direction sharply and tended to separate the noncalcified from the calcified zone. A further degenerative feature observed was the withdrawal of the hyaline ground substance from the cartilaginous tufts between the fissures, which had become impregnated with fibrinoid. The other striking change was the proliferative reaction chiefly in the deeper cell groups of the noncalcified cartilage. The most conspicuous secondary changes in the subchondral zone were the small fractures (obviously traumatic) and defects in the zone of preparatory calcification. The contiguous marrow spaces are filled by young fibrous marrow. The marginal exostosis was typical, as were the joint mice (Giant cells were found in these mice, which must have arisen from the simple fibroblasts of the perichondrium.) The synovial changes were typically those secondary to chronic joint irritation and did not show definite inflammatory infiltration.

CASE 2—Bessie M., aged 43, white, seen in May, 1932, was suffering from symptoms, over a period of four years, which clearly led to the diagnosis of multiple sclerosis. She returned in January, 1933, complaining of pain and disability of the right knee joint which followed two direct injuries about six months before. Examination elicited pressure tenderness over the patella in flexion, subpatellar crepitus and parapatellar tenderness and infiltration but no functional limitation of motion.

Roentgen examination demonstrated slight lipping of the inferior pole of the patella (fig 4). A diagnosis of chondromalacia of the patella was made and arthrotomy advised since a long period of conservative treatment had given the patient no relief, and the residual neurologic locomotor disturbance was now subordinated to the present local disability.

The degenerative changes of the patellar articular surface were at once apparent at operation. It was fibrillated in its central portion and was bordered by exostoses. The entire cartilage was edematous and lusterless. Secondary soft tissue changes were observed as well as four small loose bodies, which were removed from the intercondylar notch. One small similar area of degeneration was noted in the lateral border of the medial femoral condyle, and slight hypertrophic changes were noted over the margins of the lateral condyle. Her recovery was uneventful. She was discharged symptom free locally. Histologic studies verified the gross pathologic changes, characterized by fibrillation and erosion of its central zone. The noncalcified layer was not invaded. There were no signs of inflammation, although a slight marginal pannus was noted arising from the the synovial layer.

CASE 3—Earl S., aged 38, white, seen in June, 1929, had been ill for five years with a condition the general course of which was that of a chronic multiple infectious (atrophic) arthritis. He was treated with the usual regimen of attention to foci of infection, physical therapy and mechanical support for years, during which time the general but not the multiple joint condition greatly improved. Since 1930, the right knee localization had persistently given him the chief cause of complaint because of pain and swelling. On several occasions this joint was

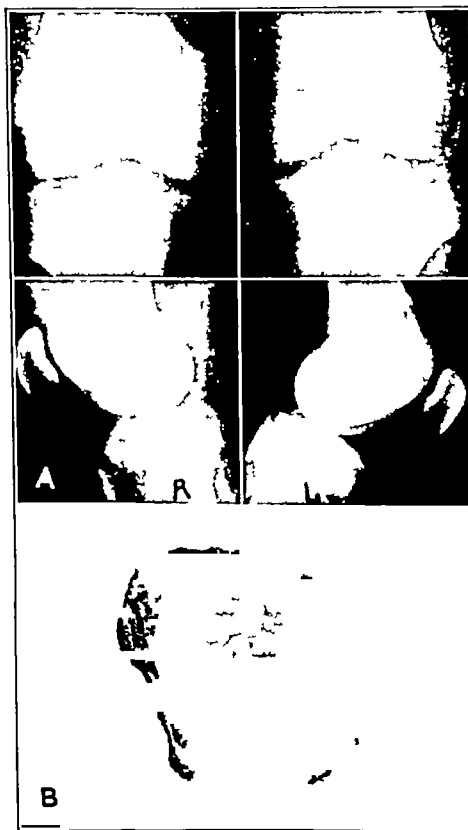


Fig 5 (case 3)—A the preoperative condition B right patellar articular surface.

aspirated, and the guinea-pig tests were negative for tuberculosis. Roentgen examination showed slight atrophic changes (fig 5). A synovectomy was indicated to clear up the local residual sequelae and eradicate a possible focus of infection.

Associated with the usual rather marked soft tissue changes was the remarkable degenerative condition of the patellar artic-

ular surface. There was beginning fissuring and ulceration in its central portion, which was distinctly soft and friable. Microscopically, the articular surface was of variable thickness, and marked irregularities and fissures traversed almost the entire thickness of the noncalcified cartilage, which were radial in direction and divided the affected zone into many irregular columns. There were no signs of inflammation, even in the slight marginal pannus noted. There was very little reaction in the subchondral zone, and only the noncalcified layer was directly involved. No definite inflammatory infiltration was noted in the synovial membrane. Convalescence was remarkable only for some troublesome postoperative pain and swelling, which promptly subsided after aspiration of old blood five days later. The temperature remained slightly elevated for one week. The patient was discharged symptom free locally.

## COMMENT

Chondromalacia of the patella has been definitely established as a true clinical entity. There is general agreement with regard to the morphology and treatment but not to its cause. Trauma must be assigned as the primary activating force on a background of constitutional predisposition, the poor regenerative power of cartilage and the peculiar mechanism of the knee joint.

The central portion of the patella is most poorly supplied with blood vessels, and the first changes occur here. The intrinsic blood supply of the entire patella is also generally negligible following adolescence. It is interesting to note that changes occur in the patellar articular cartilage in about 50 per cent of cases in the fourth decade, and in 33 per cent of men 20 years of age, according to Heyne and Ale-  
mann. That these fissural and ulcerative conditions do



Fig. 6—The patellar articular surface removed from an 18 year old patient diagnosed chondromalacia but proved to be a generalized form of chronic arthritis. The entire articular surface has been attacked chiefly by a pannus formation and resembles in no way the other localized forms described.

not represent an artefact is proved grossly by the presence of edema, and microscopically by the fibrinoid impregnation of the fissural walls, which latter is always present when a supportive structure is subjected to chronic traumatization, particularly pressure. The fissural formation is in all probability a consequence of chronic repeated traumas which break up the cartilage along its natural microscopic structural lines of cleavage. The normal mechanical resistance of the joint cartilage is markedly diminished because of the numerous fissures and the disappearance of the hyalinized ground substance. Many of the tufts are thereby completely separated and are free in the synovial fluid, rice bodies and even joint mice result in the biologic course of events. Essentially, however, the joint cartilage disappears by a progressive attrition of the joint surfaces until the bony lamellae are denuded. The disappearance of the articular surface then proceeds on a purely chemico-traumatic mechanism and is not caused by a pannus formation.

It is assumed, in most cases, that the pathogenesis of this condition is the key to the pathogenesis of arthritis deformans. Lawen stated that early excision of the affected area would delay or even prevent further development of arthritis deformans. This is apparently supported to some extent in more recent discussions. A study of the three cases herein presented seems to go a step further and supports the modern clinical tendency to consider the two great types of chronic arthritis—hypertrophic and atrophic—in the light that they are simply expressions of opposite ends of the same scale of a single disease (Knaggs). Both are residual end-result processes and are dependent on a variety of known factors. It is not surprising to note that there need be no sharp dividing line between the two types when the low differentiation of the tissues involved is taken into consideration. It is noteworthy, therefore, that both types of reaction have been observed in the several joints of an affected individual and, what is more striking, in the same joint.

From the mass of intensive clinical and laboratory studies devoted to chronic arthritis there stand out certain well defined and accepted causal factors in its pathogenesis: constitutional tendency, trauma, which must be broadly considered as "a series of physiological and pathological changes occurring in a joint subjected to prolonged and oft repeated injury either mechanical or toxic, but of a moderate degree of intensity," and bacterial infection. Trauma as an etiologic factor has been amply demonstrated both clinically and in the laboratory. Practically all of Koch's postulates have been fulfilled to prove the bacteriologic etiology in some forms of arthritis.

In the final analysis, it is essential to consider that all these factors may be operative in degree in a given case, and it is most difficult to separate or distinguish the predominant activating cause in most instances, particularly in adults. In this situation the residual state of the joint will depend, then, on the differences in blood supply of the bones and joints at different ages, the vitality of the tissues during the initial onset or invasion, the alterations produced by injuries whether intrinsic or extrinsic, and the invasive power of the bacteria (if or when present).

The cases presented serve to unify and give support to present knowledge of the pathogenesis of arthritis deformans. The traumatic element is definitely shown in case 1 as being due to the abnormal lateral mobility of the patellae with its consequent repeated intrinsic physiologic and pathologic mechanical insults. The trauma in case 2 was grossly direct and extrinsic. In case 3, one must assume that the hydrostatic pressure incident to the persistent hydrops exerted the injurious influences. The constitutional factor in case 1 is evidenced by the relaxed condition of the joints, and the congenital contractures of the little fingers, in case 2 by the lowered general resistance to joint injury on the basis of the cord lesion, while in case 3 this point is not clearly defined. Infection or toxins alone or combined must have played a part in case 3, but they cannot be definitely ruled out in the others. Even in the former case no definite inflammatory infiltration was noted. Of the greatest significance is the degenerative primary lesion of the patella noted in case 3, which clinically was a typical case of atrophic (infectious) arthritis. Finally, it may be stated that, at least in this localized form of chronic arthritis, the primary changes occur in the articular cartilage.

CARDIAC ASTHMA (PAROXYSMAL  
CARDIAC DYSPNEA)

AND THE SYNDROME OF LEFT VENTRICULAR FAILURE

SOMA WEISS, M.D.

AND

GEORGE P. ROBB, M.D.

BOSTON

Paroxysmal dyspnea in patients with heart disease is of both practical and theoretical importance. The attacks often disable and endanger the life of patients with an otherwise apparently good state of the circulation. Unlike other types of cardiac dyspnea, it frequently occurs without exertion and without long-standing severe physical or chemical derangement of the circulation. Although its importance has been emphasized from time to time, the condition, on the whole, is obscure. Most of the available information centers on the clinical description of attacks and on statistical data relating to the nature of heart disease underlying them. The explanation of the sequence of events leading to the attack, as well as the circulatory state before and during the paroxysm, is based on inferences from clinical symptoms and signs and on post-mortem observations. The more precise study of the condition is difficult, for it cannot be reproduced in animals, moreover, in man it usually occurs at night, unexpectedly, and is of relatively short duration.

During the past three years we have been engaged in studying cardiac asthma with the aid of quantitative methods. This communication is a summary of the results of those aspects of the investigation that bear on the better understanding and management of the disorder.

## LITERATURE

James Hope,<sup>1</sup> in 1833, was the first to use the term "cardiac asthma." In 1854, Stokes<sup>2</sup> considered the condition as an entity. Later Mackenzie<sup>3</sup> emphasized its significance. In the German literature, Fraenkel,<sup>4</sup> von Romberg,<sup>5</sup> Eppinger, von Papp and Schwarz,<sup>6</sup> Koranyi<sup>7</sup> and more recently Gollwitzer-Meier<sup>8</sup> and Goldscheider<sup>9</sup> dealt with predisposing factors and the nature of the attacks. In the French school, Huchard<sup>10</sup> and Vaquez<sup>11</sup> described the attacks.

Osler,<sup>12</sup> in 1897, clearly defined the condition.

In cases of advanced arteriosclerosis there are often attacks of dyspnea of great intensity recurring in paroxysms, often nocturnal. The patient goes to bed feeling quite well and in the early morning hours wakes in an attack which in its

abruptness of onset and general features, resembles asthma. There is usually a sensation of precordial distress, a feeling of constriction and oppression what the Germans call *Beklemmung*. Two other features about this form of attack will attract your attention—the evident effort in the breathing and the presence of a wheezing in the bronchial tubes and of moist rales at the bases of the lungs. The patient may spring from the bed and throw open the window in his terrible *air hunger* and he assumes an attitude most favorable to the working of all the accessory muscles of respiration. Slight cyanosis is usually present and in severe paroxysms a cold sweat breaks out in the face and limbs. The pulse is feeble, often irregular, and very small, and on auscultation one hears either gallop rhythm or the foetal type of heart beat. Death may occur in the attack.

Longcope<sup>13</sup> described paroxysmal attacks of dyspnea in the presence of syphilitic aortitis, and Keefer and Resnik<sup>14</sup> have stated that its appearance in syphilitic heart disease is due to the strain on the left ventricle from arterial hypertension and aortic insufficiency rather than to the syphilitic lesion per se.

Pratt<sup>15</sup> has published observations and statistical data on thirty-nine cases, and as late as 1926, in referring to the nature of these attacks, he said "In discussing the causation of this condition, we are treading a dangerous ground, as quagmires of speculation lie all about us." Palmer and White<sup>16</sup> have reported a statistical clinical study of 250 patients with cardiac asthma.

UNDERLYING CARDIOVASCULAR PATHOLOGIC CHANGES  
AND AGE INCIDENCE

Of the eighty-two patients with severe attacks studied by us, 53 per cent suffered from primary or secondary arterial hypertension, 20 per cent from vascular sclerosis, particularly of the coronary arteries, but without pronounced elevation of the arterial pressure, 20 per cent from syphilitic heart disease, 6 per cent from rheumatic heart disease, and in one case the type of heart disease could not be determined. In practically all the cases studied there was clinical and laboratory evidence of hypertrophy of the left ventricle or coronary disease, or both. These data agree with other reports in the literature.

The heart rate was regular with normal sinus rhythm in 84 per cent of the eighty cases in which electrocardiograms were obtained. In 16 per cent, auricular fibrillation existed. Protodiastolic gallop rhythm was detected frequently in the group with arterial hypertension.

The electrocardiogram gave definite evidence of left ventricular preponderance in 70 per cent of the cases and of coronary disease in 38 per cent. Left bundle branch block existed in 17 per cent of the cases and intraventricular block in 5 per cent.

## AGE INCIDENCE

In 71 per cent of the cases, the asthma developed after the age of 40, in 61 per cent it occurred between the ages of 40 and 79. We observed severe attacks in three instances, however, in children between the ages of 6 and 13, two of these cases were associated with malignant hypertension and one with chronic glomerulonephritis. These observations indicate that the age incidence is significant only so far as it expresses the frequency of occurrence of a type of heart disease.

From the Thorndike Memorial Laboratory, Second and Fourth Medical Services (Harvard) Boston City Hospital and the Department of Medicine, Harvard Medical School.

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associated with predominant pathologic changes of the left ventricle

#### CONDITION BETWEEN ATTACKS

*Circulatory State*—The degree of disability between attacks varied strikingly. In some of the patients studied the first and almost fatal attack occurred at night, after the usual daily labor in others there was constant disability with dyspnea and "orthopnea of necessity" requiring almost 90 degrees of elevation. A study of the peripheral circulation as measured by the stroke and minute volume output of the left ventricle, the velocity of the venous blood flow, the oxygen difference between arterial and venous blood obtained from the femoral vessels, as well as observations on the venous pressure and the absence of palpable liver and peripheral edema, indicated that in the majority of instances the peripheral circulation was essentially normal.<sup>17</sup> In another and smaller group, the cardiac output was diminished, the velocity of venous blood flow moderately slowed and the oxygen difference between the arterial and venous blood of the extremities increased, indicating a decreased peripheral blood flow. We would emphasize that pronounced disability and orthopnea were frequently associated with normal venous pressure and adequate peripheral circulation, indicating a lack of correlation between these two functions of the circulation.

The state of the pulmonary circulation was evaluated by measurements of the volume of blood flow through the lungs and by the maximal and mean velocity of pulmonary blood flow. The method used allowed the calculation of the "crude blood volume in the lungs." The oxygen saturation of the arterial blood also served as an index of the efficiency of the pulmonary circulation. The results of these studies show that the velocity of pulmonary blood flow, particularly the mean, was usually decreased. The pulmonary dye curve was flattened and prolonged, indicating marked differences in the velocity of blood flow through the various pathways of the pulmonary circuit. There was also a tendency for the amount of blood in the lungs to be increased.

These studies with quantitative measurements have been corroborated by studies of the heart and pulmonary vessels under the fluoroscope and by roentgenograms. These observations carried out by Drs H I L. Loverud, M I Smedal and one of us (R.) revealed with regularity an enlarged hilar shadow with a fanlike radiation toward the periphery and particularly toward the base of the lungs. The diaphragm was low and the excursion diminished. The border of the left ventricle showed but slight excursion, which contrasted vividly with the good excursion of the right cardiac border in the left oblique position. With effective therapy the hilar shadow caused by engorgement diminished or disappeared, the lung field became clearer, and the normal relationship between the pulsatile expansion of the two ventricles returned. Notwithstanding the intense engorgement of the lungs, râles were in many cases either few or absent, indicating lack of excessive

transudation of serum into the alveoli. In some instances with absence of râles, the large amount of blood in the lungs measured in life and found post mortem was striking.

Thus, between attacks, the pulmonary circulation showed engorgement of the vascular bed, whereas the peripheral circulation was essentially normal.

*Condition of Lungs*—In at least 63 per cent of the cases presenting pronounced cardiac asthma the clinical examination of the lungs showed marked signs of emphysema, such as increased anteroposterior diameter of the thorax, increased resonance, diminished breath sounds, partial or complete obliteration of the absolute cardiac dullness and diminished movement of the diaphragm. In 10 per cent of the cases, bronchitis or bronchiectasis was also present. The total volume of the pulmonary air space was usually diminished with an average of 4,442 cc instead of 6,760 cc. The vital capacity was considerably diminished, it was 2,406 cc instead of 4,940 cc. The average value for the residual air was 2,036 cc instead of 1,820 cc, and the ratio between the vital capacity and the residual air was 1.18 instead of 2.8 found in normal subjects.

These changes in the pulmonary air spaces can be explained, to a large extent, as being secondary to circulatory changes in the pulmonary vessels. In a control group of cardiac patients without asthma and with a greater degree of disturbance in pulmonary circulation, we often observed a lesser degree of disturbance in the physiologic state of the air spaces than in the cases presenting cardiac asthma, in the latter group, therefore, secondary functional emphysema is superimposed on a chronic emphysema. The existence of this secondary emphysema, as a result of engorgement and capillary hypertension of the pulmonary circuit, has also been substantiated by the observation of a constant improvement between the vital capacity-residual air index and vital capacity under rest, digitalis and dehydration therapy.

#### THE ATTACK

The clinical appearance of the paroxysm has been described classically by Hope, Stokes, Osler, Romberg and others. We comment on certain aspects heretofore insufficiently appreciated. The majority of attacks are associated with both inspiratory and expiratory distress, and with rhonchi and moist râles. The respiratory midposition of the thorax becomes elevated and there is a tendency for the chest to become fixed in a forced inspiratory position so that respiration is almost entirely diaphragmatic. In one case, during an extreme attack, the respiration ceased with the thorax held rigidly in a high inspiratory position that at first resisted artificial respiration. During attacks there is also a striking inspiratory retraction of the entire lower half of the thorax, most marked in the intercostal spaces. The degree of pulmonary edema usually depends on the severity and duration of the attack. Patients with low plasma protein are particularly apt to develop severe pulmonary edema. The pulmonary second sound becomes greatly accentuated, and often, even in the presence of marked hypertension, is louder and more ringing than the aortic second sound. With the cessation of the attack the original relationship between these heart sounds is restored. The color of the skin, particularly in severe attacks is ashen rather than cyanotic. The small cutaneous veins are collapsed and the larger veins are small and apparently constricted. A "cold sweat" usually breaks forth and in severe seizures may drench the patient.

<sup>17</sup> The methods used were (a) for volume, velocity of the blood flow Moore J W Kinsman J M Hamilton W F and Spurling R G Studies on the Circulation II Cardiac Output Determinations Comparison of the Injection Method with the Direct Fick Procedure Am J Physiol 80 331 (July) 1929 Robb G P and Weiss Soma A Method for the Measurement of the Velocity of the Pulmonary and Peripheral Venous Blood Flow in Man Am Heart J to be published. (b) For lung volume Van Slyke D D and Ringer C A L The Determination of the Lung Volume Without Forced Breathing J Exper Med 37 457 (April) 1923 (c) For the venous pressure Moritz F and Tabora D V Ueber eine Methode beim Menschen den Druck in oberflächlichen Venen exact zu bestimmen Arch f klin Med 98: 475 1910

In a number of cases, particularly with syphilitic aortitis, there was intense dyspnea and tachypnea without characteristic asthmatic breathing or the usual signs of pulmonary edema. Patients with aneurysmal dilatation of the aorta and pressure on the trachea or bronchi on the other hand, tended to develop particularly severe bronchospastic attacks. Patients with mitral stenosis did occasionally develop an asthmatic type of respiratory distress but lacking autopsy evidence we cannot state with certainty that aortic disease with left ventricular hypertrophy and coronary disease are not causative in such cases. The character of these attacks differs from the classic cardiac asthma.

The association of cardiac asthma and precordial pain was rather frequent, and in some instances precordial pain with classic anginal radiation and asthma developed independently in the same patient. Instances were also observed of severe attacks of asthma, rather than pain, accompanying coronary thrombosis. Contrary to the general belief as well as to statistical data in the literature, cardiac asthma in its milder form was found to develop frequently at a certain stage of heart disease. Nocturnal periodic nervousness, cough, paroxysmal pounding of the heart and Cheyne-Stokes breathing are equivalent manifestations of mild cardiac asthma, often they are forerunners of severe cardiac asthma.

*Circulatory State*—The heart action during an attack was invariably rapid, with a tendency to embryocardia, but arrhythmias as a rule did not develop. In three instances in which electrocardiograms were obtained during seizure, no essential change in conduction time, ventricular complex or the electrical axis was observed.

The peripheral circulation during attacks showed variable changes. Usually the volume output of the heart either remained the same or became decreased, in no case was there an increase. The oxygen difference between the arterial and the venous blood of the extremities showed no constant change. There was a tendency for the velocity of the peripheral venous blood flow to be absolutely or relatively increased. The arterial blood pressure, with rare exception, was elevated, usually to a striking degree. The venous pressure remained the same as before the attack or became moderately elevated. The oxygen saturation of the arterial blood became slightly or markedly reduced, depending on the severity of the pulmonary edema and bronchospasm, at times such low values as 40 to 50 per cent of saturation were obtained. Thus, although in the very severe and prolonged attacks particularly there was venous congestion with normal or reduced velocity of blood flow, it is significant that the venous pressure and the velocity of the peripheral blood flow usually remained fairly normal.

The pulmonary circulation was characterized by intense engorgement and hypertension. A distinct accentuation of the pulmonary second sound usually occurred. The volume of blood flow through the lungs during the attacks generally remained unaltered or was decreased. The velocity of the pulmonary blood flow was regularly diminished during the attack, this was particularly true of the mean velocity of blood flow as indicated by the prolongation of the dye distribution curve. These changes together with the tendency to pulmonary edema, indicate that the main characteristic of the pulmonary circulation during an attack is not an alteration in the volume of blood flow through the lungs but rather an increase in the volume of the pulmonary vascular bed and relative stagnation of blood,

with acute hypertension of the pulmonary circuit and transudation of serum. Thus, the difference between the peripheral and the pulmonary circulation already noted between attacks becomes further accentuated during the attack.

*Condition of Lungs*—The clinical character of the respiration has been referred to. A forced inspiratory position of the thorax with evidence of pulmonary congestion, later with edema and spasm of the bronchi, is present. The lungs appear to be overdistended. The orthopnea usually becomes maximal. Measurement of the lung volume and residual air during the attack is not feasible, but the fact that the vital capacity is considerably further reduced even in the milder attack without gross bronchospasm, indicates that the physiologic state of the air spaces, and thus the aerating function of the lungs, is acutely disturbed. The oxygen unsaturation of the arterial blood often of marked degree, is an evidence of the poor pulmonary ventilation of the lungs. The low position of the diaphragm, with high inspiratory position of the thorax speaks for an increase in the volume of the thorax during the attack. This increased thoracic volume is occupied in part by increased amount of blood in the vascular bed in part by transudation of edema fluid into the pericapillary and intra-alveolar space, and, in addition, probably by an increase in the total volume of free air space. Thus an acute functional emphysema is precipitated and superimposed on the preexisting emphysema. Such an unfavorable relationship between the pulmonary circulation and the bellows function of the lungs creates a situation which obviously leads rapidly to a state of suffocation.

#### PRECIPITATING FACTORS OF ATTACKS

One of the most perplexing aspects of the problem is the understanding of the factors which precipitate the attack in a patient with a predisposing derangement of the cardiovascular and nervous systems. A knowledge of these factors, as well as of those leading to cessation of the paroxysm, should throw much light on the nature of the condition.

There are several factors that definitely lead to the attack. Although the paroxysm can occur during the day, particularly in advanced cases, it usually occurs at night. The horizontal position of the body is one of the most important factors in this nocturnal character of asthma. This is shown by the fact that when patients are in the high, "pillowed-up," position attacks are less apt to occur, and that standing regularly gives relief. Patients discover prompt relief after rushing to the window, drinking water or brushing their teeth, but the common feature in these measures is the change from the horizontal to the upright position. Some of the patients dread to go to bed, some, with severe attacks prefer even to stand up, leaning forward, throughout the night. We have had an opportunity to study several patients who, as soon as the thorax was lowered below a certain critical angle of orthopnea, invariably developed increasing signs of congestion, accentuation of the pulmonary second sound, elevation of the arterial pressure, Cheyne-Stokes respiration, rales wheezing and finally typical but mild seizures. These observations together with the fact that change from lying on the back to lying on the abdomen with the same angle between the thorax and the body resulted in cessation of the attack and increase in the vital capacity indicate that the angle and the position of the thorax rather than of the entire body have an

important bearing on the sequence of events within the thorax leading to attacks

Patients with marked left ventricular disturbance frequently develop Cheyne-Stokes breathing at night. The periodic circulatory changes during the two phases of the respiration, together with the sudden awakening with excitement in the beginning of hyperpnea, during which the inspiratory position of the thorax becomes progressively increased, easily lead, in the already over-filled pulmonary circuit, to acute pulmonary congestion and attack. Noise, nightmare, paroxysms of coughing caused by gradual accumulation of mucus in the respiratory passage during sleep, the urinary reflex, and other factors may induce a change from a state of relative depression to sudden hyperexcitability of the vasomotor, cardiac and other centers. Such factors act as triggers in precipitating an acute and temporary imbalance between the functioning of the right and left ventricle, a heightened pulmonary congestion with acute pulmonary vascular hypertension resulting finally in pulmonary edema.

The water content of the tissues is also an important although not a primary factor in the precipitation of seizures. Patients subject to cardiac asthma often exhibit slight water retention in the form of physiologic edema while active during the daytime. During the night, when recumbency with its lowering of the peripheral hydrostatic pressure facilitates the entrance of fluids from the tissues of the extremities into the blood stream, the site of water retention tends to be transferred to the lungs. We have obtained evidence that, in the early stage of the attack particularly, the water content of the arterial blood is somewhat diminished as compared with that of the venous blood, indicating a loss of fluid into the lungs. Often the induction of slight diuresis results, all other factors being equal, in the prompt cessation of recurrent attacks.

In addition to these emotional reflexes and physical factors, our observations indicate that histamine, ergotamine and anoxemia can at times induce mild seizures. From the foregoing analysis, it is clear that several factors must operate in the development of cardiac asthma.

#### FACTORS LEADING TO CESSATION OF ATTACK

We have summarized elsewhere our experiences with effective therapeutic measures in cardiac asthma.<sup>18</sup> It was emphasized that the modus operandi of all the efficient physical and chemical agents depended on their capacity to relieve the pulmonary hypertension and improve the function of the left ventricle: (a) through reducing peripheral venous return (venous stasis with tourniquets over the extremities, elevation of the body, or venesection), (b) through decreasing peripheral vascular resistance (glyceryl trinitrate, stimulation of the carotid sinus, small doses of epinephrine, at times atropine), (c) through improving the coronary blood flow (glyceryl trinitrate, small doses of epinephrine, digitalis bodies, at times large doses of atropine), (d) through relaxing the bronchioles (epinephrine, ephedrine, lobeline, atropine), (e) through abating excitement and depressing reflexes (morphine). Thus, effective measures are those which influence favorably at least one important part of this complex vicious circle and hence tend to reestablish normal pulmonary circulation and left ventricular function.

Just as in the precipitation of attacks the ventricular imbalance develops suddenly, so the therapeutic measures that are capable of reestablishing the balance between the two ventricles and eliminating the acute pulmonary engorgement can improve the clinical condition with surprising rapidity. We have frequently observed relief and the disappearance of attacks within from two to three minutes after the application of tourniquets over the extremities.

The mechanism leading to spontaneous improvement is apparently not uniform. In the majority of instances of moderate attacks, the patient jumps out of bed and by assuming an upright position obviously decreases the venous return to the heart and thus improves the pulmonary circulation by allowing the left ventricle to deplete the excessive volume of blood in the lungs. One also often sees the patient leaning forward with the head bent on the chest during the attack and experiencing partial relief; in this position, too, the venous return is impaired and therefore the mechanism of improvement is the same. In addition, bending and lowering of the head may induce favorable vasomotor and circulatory reflexes.<sup>10</sup> In the severe attacks, on the other hand, there may be a secondary failure of the right ventricle with spontaneous venostasis, and, finally, in extreme attacks, all the clinical and circulatory manifestations of shock may supervene. The heart rate becomes rapid, the venous return through peripheral pooling of blood is decreased, and the arterial pressure falls. This secondary failure of the peripheral circulation in extreme attacks with shock gives the left ventricle an opportunity to recover and take care of the overburdened pulmonary circuit. Here is an example of a regulatory mechanism in disease in which one type of serious derangement induces another, which in turn indirectly rectifies the first imbalance.

#### PREVENTION OF ATTACKS

Measures that improve the reserve functional capacity of the left ventricle, decrease the excitability of the cerebral centers, prevent pulmonary congestion, decrease capillary permeability and transudation, and eliminate nocturnal restlessness are efficient therapeutic measures. The technic of the administration of digitalis substances, the importance of dehydration, and the role of high protein diet and of other measures have been discussed before.<sup>18</sup>

#### PROGNOSIS

Attacks of cardiac dyspnea offer a serious prognosis. Out of eighty-seven patients with pronounced and classic attacks, forty-four were known to be dead within one year after observation. Studies of the records of a number of other cases indicate, however, that exceptions with attacks of several years' duration are not rare. Not infrequently, with the onset of right-sided congestive failure, the attacks may even disappear, often to recur when the peripheral circulation again becomes normal. The presence of pronounced bronchospastic tendency during attacks offers relatively better prognosis. Patients with left ventricular disturbance not infrequently develop asthma with respiratory infections which temporarily or permanently disappear with the disappearance of the pulmonary infection. In these cases the bronchial infection predisposes to bronchospasm and therefore lesser grades of circulatory change precipitate the seizure. Such an attack, although of

<sup>18</sup> Weiss, Soma and Robb, G. P. *The Treatment of Cardiac Asthma (Paroxysmal Cardiac Dyspnea)*. M. Clin. North America 18: 961 (Jan.) 1933.

<sup>19</sup> Weiss, Soma and Baker, J. P. *The Carotid Sinus Reflex in Health and Disease. Its Role in the Causation of Fainting and Convulsions*. Medicine to be published.

somewhat different significance, is, in our opinion, of the same nature as classic cardiac asthma. The difference lies only in the predominance of the bronchospastic or circulatory disturbance. The differentiation of primary bronchial asthma from cardiac asthma is often difficult and at times cannot be made.

## COMMENT

The disturbed balance between the coronary blood flow and the metabolic requirement of the muscle of the left ventricle, as compared with the right ventricle, is the primary factor in the pathogenesis of cardiac asthma. As a result, the reserve functional capacity of the left ventricle becomes disproportionately impaired, and later, according to the observations presented there follows a back pressure effect within the pulmonary circuit, usually without failure of the peripheral circulation. In this engorged state of pulmonary circulation the reserve pulmonary vessels are taken up by blood, and pulmonary vascular hypertension of moderate to severe degree develops. It has been demonstrated that these circulatory changes then induce a functional emphysema of the lungs. Our studies with quantitative measurements in man, therefore, confirm the theory proposed by von Basch<sup>20</sup> some fifty years ago on the stiffening effect of the circulation on the lungs. In addition to this functional emphysema, a primary organic emphysema and bronchitis with a bronchospastic predisposition is frequently encountered in patients with cardiac asthma. Sleep with the body and particularly the thorax in the horizontal position results in additional pulmonary engorgement. The coronary circulation in sleep in the horizontal position can only be surmised. Consideration of the pulmonary hemodynamics, however, suggests some hindrance to the coronary arterial inflow as well as the venous return, particularly through the thebesian veins.

It is then on these predisposing bodily states that the precipitating factors act as triggers. Excitement with fear, and sudden hyperactivity of the autonomic brain centers, accompanying the precipitating factors discussed, result in the sudden simultaneous elevation of the arterial pressure and constriction of the small venules controlling the blood depots of the body. We have obtained evidence that chemical substances such as epinephrine and histamine and choline exert a pronounced vasomotor effect on the venules.<sup>21</sup> The sensitivity of the venules to histamine is even greater than that of the arterioles. Thus, reflexes and chemical substances induced by the precipitating factors cause a sudden increase in the peripheral vascular resistance and simultaneously an increase in the venous return. These factors acutely embarrass the already impaired left ventricle, which is unable to respond to the emergency because its ischemic state is now intensified by further impairment of the coronary circulation from coronary spasm and from obstruction to the coronary venous return as a result of the suddenly increased pressure in the right side of the heart. This most unfavorable circulatory state leads to an acute accentuation of the left ventricular embarrassment which in turn results in an acute generalized pulmonary vascular hypertension. In order to be compatible with life, the duration

of the acute failure of the left ventricle can last but a short period of time, in the order of seconds or minutes. Following this, the vital balance between the ventricles as far as blood flow is concerned is reestablished, but with continued disturbance within the pulmonary circuit. The blood in the lungs remains trapped and therefore the dyspnea continues after the ventricular balance is reestablished. The balanced ventricular function is maintained now with a new circulatory adjustment in the lungs. For the relief of the attack it is essential, therefore, that the left ventricle be capable of throwing out more blood from the lungs than the right throws in. Measures such as venostasis induce such a situation promptly, hence, they relieve attacks rapidly. In spontaneous relief, this is accomplished more slowly. Improvement of other aspects of the attack, such as the disappearance of edema and stiffening of the lungs, takes a longer time. We have observed in both patients with cardiac asthma and with other types of cardiac disease that a restoration of the pulmonary hemodynamics long preceded the disappearance of "functional circulatory emphysema."

Clinical signs, measurements of the pulmonary air spaces and pharmacologic observations revealed a bronchospastic element in cardiac asthma. In a number of instances with classic cardiac asthma, we have observed a large number of eosinophilic leukocytes in the sputum and less often in the blood. Thus, cardiac and bronchial asthma behave similarly in these respects, although the underlying structural and physiologic changes differ.

Heberden<sup>22</sup> has stated that angina pectoris is not associated with embarrassment of the respiration, we have presented, on the other hand, a number of parallelisms existing between the underlying etiology of cardiac asthma and angina pectoris. It is probable that in the typical cases of angina the respiratory distress is absent because of lack of previous pulmonary engorgement and predominant pathologic changes in the left ventricle, and because during the attack the function of the two ventricles becomes involved to the same degree, hence acute pulmonary engorgement does not develop. This is also corroborated by the behavior of the patient who, with classic angina but without paroxysmal dyspnea, following left coronary thrombosis develops cardiac asthma.

Our studies have not revealed as yet the more intimate role of chemical substances and reflexes in the mechanism of the attack. Reflexes probably play a particularly significant role.<sup>23</sup> In three instances we have blocked the vagus nerve with procaine hydrochloride, which resulted in improvement of the dyspnea, orthopnea, elevation of the vital capacity and ipsilateral disappearance of rhonchi and rales, and improvement of the breath sounds.

Measurements of the blood flow between and during an attack did not confirm the contention of Eppinger, von Papp and Schwarz<sup>24</sup> that during an attack the cardiac output is considerably increased. Such changes did not exist and, in our opinion, are not the center of the problem. We also failed to find any basis for a separation of cerebral asthma from cardiac asthma as suggested by Romberg.<sup>24</sup>

20 von Basch J. J. Allgemeine Physiologie und Pathologie des Kreislaufs. Vienna 1892.

21 Weiss Soma Robb G. P. and Ellis L. B. The Systemic Effects of Histamine in Man with Special Reference to the Responses of the Cardiovascular System. Arch. Int. Med. 49: 360 (March) 1932. Ellis L. B. and Weiss Soma A Study of the Cardiovascular Responses in Man to the Intravenous and Intra Arterial Injection of Acetylcholine. J. Pharmacol. & Exper. Therap. 44: 235 (Feb.) 1932.

22 Heberden W. Pectoris dolor in Commentaries on the History and Cure of Disease translated by W. Heberden Jr. London 1892.

23 Wassermann S. Zur Pathogenese des akuten Herzlungenödems. Wien klin. Wchnschr. 41: 190 (Feb. 9) 1928.

24 von Romberg Ernst. Ueber kardiales und cerebrales Asthma. Wien med. Wchnschr. 80: 361 (March 8) 1930.

The clinical, structural and physiologic characteristics observed between attacks are the expressions of a subacute or chronic failure of the left ventricle, those during attack, of an acute failure. Some aspects of the left ventricular failure have been discussed in greater detail before.<sup>25</sup>

On the basis of the joint clinical and laboratory evidence, one can definitely state that the *syndrome of acute or subacute left ventricular failure*, suggested and discarded by a number of clinicians during the past century, exists and plays a fundamental role in a large group of patients with heart disease. The syndrome is characterized by relative or absolute insufficiency of the left coronary circulation, such as chiefly exists in arterial hypertension, coronary sclerosis and thrombosis, and in syphilitic aortitis. It is accompanied by a tendency to protodiastolic gallop rhythm, electrocardiographic evidence of left ventricular preponderance and changes in ST complexes indicating coronary and myocardial disease. Bundle branch block occurs in an appreciable percentage of the cases. Clinically there is also evidence of emphysema of the lungs with orthopnea and often with accentuation of the pulmonic second sound. During sleep, Cheyne-Stokes breathing is often present. Roentgen examination of the lungs reveals an increased hilar shadow with fanning out toward the periphery, the result of pulmonary congestion. The pulsatile expansion, as observed by fluoroscopy, of the left ventricle is relatively small, whereas the right ventricular activity is normal or increased. Notwithstanding the marked disability of the patient, as shown by dyspnea and orthopnea, the failure of the peripheral circulation, as evidenced by the lack of engorged veins, the absence of palpable liver, and peripheral edema, is slight or completely absent. Depending on the degree and rapidity of the failure of the left ventricle, and on the state of the right ventricle, these clinical manifestations show much variation.

In this presentation we have focused our attention on changes in the circulatory and pulmonary systems, these being of the greatest importance. Obviously, changes in other organs have also an important bearing. The rôle of the central nervous system is particularly important. Alterations in the diseased cardiovascular system by various emotional states has been demonstrated previously.<sup>26</sup> We were impressed by the bearing on the attacks of mental stress, fear and subconscious mental activity during sleep. Among the effective therapeutic measures, psychotherapy is important. Thus, in cardiac asthma, physical and chemical as well as emotional and reflex factors are in constant interaction, and measures that influence these factors singly or combined can bring relief.

#### SUMMARY

1 A study of the dynamics of the peripheral and pulmonary circulations in cardiac asthma is presented, and the relation of the circulation to clinical symptoms and signs of left ventricular failure and to the mechanism of asthmatic attacks is described.

2 Whereas the peripheral circulation between attacks of cardiac asthma is usually normal, the pulmonary

circulation exhibits engorgement and evidence of pulmonary hypertension.

3 Simultaneous measurements of the lung volume and its subdivisions, and the pulmonary circulation between attacks reveals a functional pulmonary emphysema caused by disturbance of the pulmonary circulation.

4 With improvement the pulmonary circulation first becomes normal, followed by disappearance of the functional emphysema.

5 In the precipitation of attacks, the coexistence of subacute failure of the left ventricle and acute precipitating factors is essential.

6 Acute pulmonary hypertension, a secondary intense functional emphysema, and pulmonary edema are the main features of the attacks. The volume of the blood flow through the lungs is normal or decreased, the velocity usually decreased.

7 The pulmonary rather than the peripheral circulation is related to orthopnea.

### COMPLICATING POLLEN FACTORS ENCOUNTERED IN RAGWEED HAY FEVER

AN ATMOSPHERIC STUDY

O C DURHAM

NORTH CHICAGO, ILL.

Pollen therapy, as developed during the past two decades, is not a process—it is a study of individual susceptibility to pollen, individual contact with pollen and individual response to specific pollen extracts. Since Duke<sup>1</sup> has shown that susceptibility to pollen is largely a matter of the relative amount of pollen with which the patient has come in contact and since the patient's response to pollen therapy is influenced by the amount of pollen, success in the study of individual hay fever cases is partly dependent on factors outside the physician's control and often outside his knowledge and experience. It is safe to assume that a large part of the poor results in pollen therapy is due to basic botanic causes. The choice of pollen or pollens to be used in the diagnosis and treatment of a hay fever sufferer is really a question of that patient's daily and seasonal quantitative contact with known toxic pollens.

Much effort has been expended during the past fifteen years in attempting to solve this fundamental problem of pollen contact. Usually the approach has been indirect, the emphasis being placed on the geographic distribution of hay fever weeds. Many, but not nearly enough, local and general botanic surveys have been made, but the resulting lists of plants have often been impracticable, because no real evidence was offered as to the relative amounts of the various pollens actually found in the air. In a list, one plant looks as important as another. Even Thommen's<sup>2</sup> five postulates for evaluating possible hay fever plants cannot be applied with any degree of precision. It is apparent that an accurate knowledge of the relative amounts of all hay fever pollens found in the air throughout the year will answer most of the botanic questions arising in the practice of pollen therapy. This is the direct approach.

25 Weiss Soma. Circulatory Adjustments in Heart Disease. A Concept of Circulatory Failure. Ann. Int. Med. 5: 100 (Aug.) 1931.  
Robb G. P. and Weiss Soma. Effect of Digitalis and Rest on Pulmonary and Peripheral Circulation in Patients with Circulatory Failure Caused by Heart Disease. Proc. Soc. Exper. Biol. & Med. 29: 1231 (June) 1932.  
26 Weiss Soma. The Interaction Between Emotional States and the Cardiovascular System in Health and in Disease, Emanuel Libman Anniversary Volumes 3: 1181 1932.

From the Biological Laboratories of Abbott Laboratories.  
1 Duke W. W. Allergy. Asthma. Hay Fever. Urticaria and Allied Manifestations of Reaction. St. Louis, C. V. Mosby Company, 1925.  
2 Coca A. F. Walzer Matthew and Thommen A. A. Asthma and Hay Fever. Springfield. Charles C. Thomas, 1931.

to the problem. Fortunately it is being found that atmospheric studies tend to simplify rather than complicate the issue.

In keeping with its relative importance, ragweed has received most of the attention in previous atmospheric pollen surveys. This study is the first attempt to evaluate quantitatively the pollens of secondary importance throughout the ragweed area. It is the outgrowth of an intensive four-year study of the national ragweed pollen situation, which accounts for the fact that slides were not exposed before August 10, as would be necessary for a complete picture of the behavior of such pollens as Russian thistle and hemp, whose seasons begin before that of ragweed. For the same reason, the geographic limits are not inclusive for sages and other western pollens whose territories extend beyond the ragweed area. These atmospheric observations are supported by field work, as I have had the privilege of making careful examinations of the hay fever flora in and about almost every city in which slides are exposed. While the study embraces data for only one year the results have added significance because of the fact that these pollens have been studied on the ragweed slides and, in some instances, I have counted them for several years. The value of these one-year statistics is also enhanced by the knowledge of the behavior of ragweed at these same locations over a four-year period.

This is the first attempt to evaluate on a nation-wide scale the pollens of secondary importance in the ragweed area during the ragweed season. Most of the statistics were obtained by making differential counts on all pollen slides exposed during 1932 at stations of the United States Weather Bureau, the Canadian Meteorological Service and the Mexican Meteorological Service. In several instances, figures for other years have been included and in a few instances data are drawn from the reports of other workers. In all cases exposures began on August 10 and continued as long as appreciable amounts of pollen were found in the air. The methods of exposure and counting have been described in my previous articles.<sup>3</sup> The proportions shown here are based on the total number of pollen granules of each kind found on the usual unit area of slide surface throughout the season.

In the eastern part of the United States the fall pollen problem is comparatively simple. In a number of Eastern cities ragweed constitutes more than 98 per cent of the total fall pollen crop. This finding is in accord with that of Acquarone and Gay<sup>4</sup> at Baltimore. In the Middle West there is a much larger percentage of pollen from other sources than ragweed in some cases more than 50 per cent. The country may be sharply divided at the fifty-ninth meridian (east edge of Kansas) into an eastern region where ragweed is almost the only fall pollen and a western region where Russian thistle, western water hemp, Kochia, or the sages are often as important as ragweed.

#### RAGWEED FAMILY

Rather extensive reports have been made on the distribution of ragweed in North America during the past four years. No attempt has been made in previous studies to determine the proportion of ragweed pollen coming from the various species of ragweed (*Ambro-*

siaceae), pollen from all species of the four genera being counted as "ragweed." Short ragweed (*Ambrosia elatior*) and giant ragweed, known also as horseweed (*Ambrosia trifida*), are well distributed throughout almost the whole area studied and are of course more concerned in the total pollen crop than all other plants taken together. Of the two, short ragweed is the more important.

The only other ragweed pollen of wide geographic distribution is that of cocklebur (*Xanthium* spp.). It is found throughout the area studied, but since the quantity is so small, a separate record was not made. It appeared most often on slides from the South Central states during August.

In counting, only burweed marsh elder (*Iva xanthifolia*) was differentiated from the other ragweed pollens. It was found to be most abundant in the Dakotas, Nebraska and Colorado. It is also found west of these states.

Chenopod and amaranth were not differentiated except in the case of Russian thistle and Kochia. Russian thistle (*Salsola pestifer*) was found to be abundant in South Dakota and Colorado but was found as far south as Amarillo, Texas, where it is the principal offender. Omaha marks the practical eastern edge of its range. Kochia or Mexican firebush (*Kochia scoparia*), is found in the same area as Russian thistle and it is most abundant in western Nebraska, where it constitutes more than half of the pollen content of the air.

Western ragweed (*Ambrosia psilostachya*) is common west of Wichita and Oklahoma City and on the Mexican border. Marsh elder (*Iva ciliata*) thrives in the South Central states and southern ragweed, or lance-leaved ragweed (*Ambrosia bidentata*) is found throughout the most of Missouri, southern Illinois, eastern Kentucky and Tennessee and part of Arkansas. Separate reports were not made for these ragweeds. To determine their exact role is difficult but not impossible and, no doubt, will be worked out later.

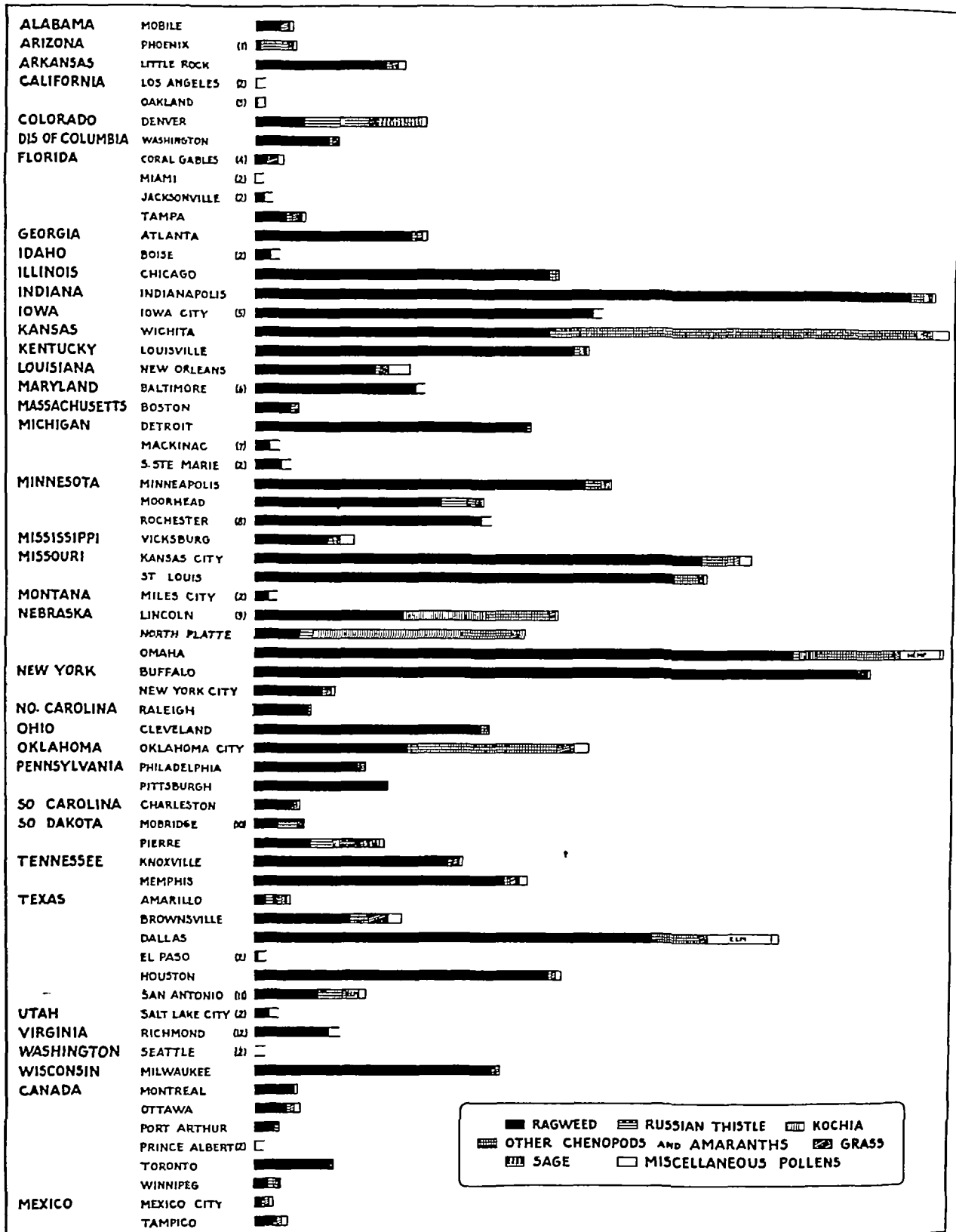
The only ragweed pollen readily distinguishable from other ragweed pollens and found in important quantities is that of burweed marsh elder (*Iva xanthifolia*), variously known throughout the Northwest as "high marsh elder," "tall poverty weed," "prairie ragweed" and "horse weed." This study shows it to be important in the Dakotas, Nebraska and Colorado. Omaha had the largest amount of this pollen but Denver had the largest proportion. Burweed marsh elder is common in but not around Chicago. On slides exposed on the Federal Building in the Chicago "loop," the proportion of burweed marsh elder pollen settling out of the upper air was exactly 1 per cent of the total ragweed deposit. Exposures near the ground and near the weeds have a much greater proportion of this pollen. This is an excellent demonstration of the fact that after all the pollen content of the upper air above even a large city is determined more by the hinterland than by the city areas themselves.

#### CHENOPOD

The practical distribution of these pollens is regional, rather than general, although there is one member—lamb's quarters (*Chenopodium album*)—which is found in large amounts throughout the cultivated districts of North America. That lamb's quarters is not important in the eastern part of the United States is proved not only by the small amount of pollen in the air but by the experience of allergists practicing in that area.

3 Durham, O. C. Incidence of Ragweed Pollen in United States During 1929. *J. A. M. A.* 94, 1907 (June) 1930.

4 Acquarone, Paul and Gay, L. A Survey of the Pollen Flora in Baltimore During 1929. *J. Allergy* 2, 336 (July) 1931.



■ RAGWEED    ▨ RUSSIAN THISTLE    ▩ KOCHIA  
 ▤ OTHER CHENOPODS AND AMARANTHS    ▧ GRASS  
 ▦ SAGE    □ MISCELLANEOUS POLLENS

Proportion of the various pollens found on atmospheric slides exposed during the fall of 1932, except as noted: 1 Unpublished data (1928) cooperation of Dr. Orville Harry Brown; 2 Ragweed data only for year 1929, except Jacksonville, Salt Lake City, Prince Albert (1930); Durham O. C. A Comparison of Ragweed Pollen Incidence in the United States for 1929 and 1930; J. Allergy 2: 258 (May) 1931; 3 Rowe, A. H. A Study of the Atmospheric Pollen and Botanic Flora of the East Shore of San Francisco Bay; J. Lab. & Clin. Med. 13: 416 (Feb) 1928; 4 Nichol, E. S. and Durham O. C. A Pollen Survey of Miami, Florida; South. Med. J. 24: 947 (Nov) 1931; 5 Unpublished data for ragweed only (1928-1930); Cooperation of Dr. Zella White Stewart; 6 Acuarone and Gay; 7 Unpublished data for ragweed only (1929) cooperation of Dr. Siegfried Maurer; 8 Ragweed data only (1928) cooperation of Dr. C. K. Maytum; 9 Unpublished data (1928) cooperation of Dr. Paul Black; 10 Unpublished data (1932) cooperation of Dr. G. H. Twining; 11 Unpublished data (1929-1930) cooperation of Dr. I. S. Kahn; 12 Ragweed data only (1928) cooperation of Dr. Warren T. Vaughan.

In this group, as in the ragweed family, the pollens are so similar microscopically that only a few of the members of the group may be easily distinguished. Those most readily identified are Kochia, or Mexican firebush (*Kochia scoparia*) and Russian thistle (*Salsola pestifer*). Western Nebraska is the center of the ever widening area in which Kochia is becoming a serious hay fever menace. At North Platte, three fourths of the Chenopod-Amaranth pollens and more than half of the total pollen count was Kochia. Late clinical reports on this pollen are not available, but the plant is rapidly becoming as important as Russian thistle.

Russian thistle is more widely distributed than Kochia. The eastern edge of its territory is a line from the Panhandle of Texas to the northwest corner of Minnesota. This is a region in which the territories of Russian thistle and ragweed overlap. At Pierre, S. D., there was about half as much Russian thistle pollen as ragweed pollen. While Russian thistle must be regarded as a regional hay fever menace, the plants may be found in all parts of the country wherever conditions are favorable. It is, of course, crowded out of soil that will support a normal growth of other weeds—especially the larger ragweeds—but in sandy areas and on railway embankments composed of cinders, and sometimes in riprap on river levees, it gains a small foothold. Large sandy areas on the shores of Lake Michigan support a rather vigorous growth of this plant, but it is impossible to find more than an occasional pollen granule on the Chicago slides. When the plant is abundant in the immediate vicinity of a hay fever sufferer's residence, it should always be considered a potential factor.

From eastern Nebraska to central Texas is an area in which western water hemp (*Acnida tamariscina*) thrives in all moist land and is especially abundant in corn fields when the season is favorable. It is by far the best producer of any of the members of these two closely related families. Most of the enormous amount of pollen other than ragweed for the season of 1932 at Wichita, Oklahoma City and Omaha, as well as the smaller proportion at Kansas City, must be credited to this plant.

Palmer's amaranth (*Amaranthus palmeri*), which is quite as capable of producing pollen as is western water hemp, is found only in the Southwest and probably enters into this survey only at Dallas and San Antonio, Texas.

#### GRASS FAMILY

As noted by all botanic investigators in allergy, the grass family is composed of a great many members all of which produce toxic pollen, but few of which produce it in large amounts. The possible importance of grass during the ragweed season is greater than is indicated by the mere 4 per cent of its pollen in the general averages. Grass symptoms once started during the more or less definite season in May and June often seem to persist through July and merge indefinitely with ragweed symptoms. It is therefore worth while to give the grasses some consideration during the fall. Corn pollen has often been mentioned as a factor of restricted local importance. The extremely large corn pollen granules readily distinguishable from other grass pollens are occasionally found on the slides. Some grass pollen was found at every station at which slides were exposed, the greatest amount being recorded at Oklahoma City, but the proportion was of course small, being but 3 per cent. Proportions as high as

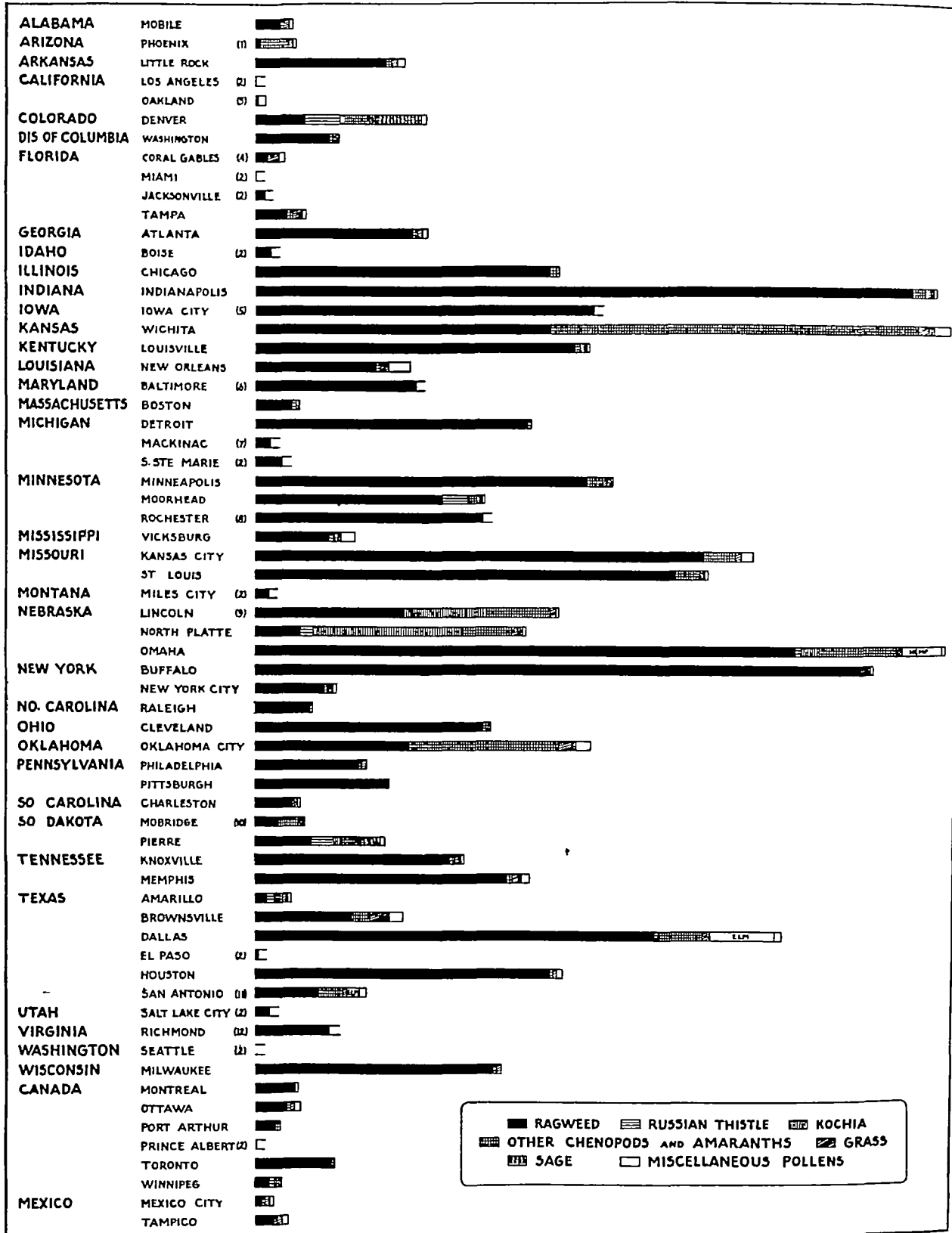
17 per cent of grass pollen are found along the southern gulf, and more at Mexico City. Since all grass pollens are similar in appearance varying only in size, it is quite impracticable to try to identify the different species of grass pollens found in the air. Some of the grasses in bloom south of the Mason and Dixon line during the ragweed season are Bermuda grass, Johnson grass and the various species of brome grass, locally known as brome, or broom sedge. From the size of the pollens found on the southern slides, I am convinced that Johnson grass contributes a greater part of the atmospheric grass pollen than has been supposed. In the North it is difficult to suggest the source of the small percentage of grass pollen. The most conspicuous of the fall-pollinating grass is the common crabgrass or lawn garden and field, but there are a number of other species that might be of slight local importance.

#### SAGE

The sages are closely related to ragweed and the pollens often interact on skin tests. Sage pollen is known to be very active in hay fever, but the plants are not to be compared with the ragweeds in productive ability. The prairies of the Mississippi Valley were originally covered with a number of species of these plants which have now been largely destroyed by cultivation. Traces of them may be found on such remnants of virgin prairies as railroad rights of way. No attempt is made in this paper to distinguish between the pollen of the various species of sage, of which prairie sage (*Artemisia ludoviciana*), pasture sage (*Artemisia frigida*) and sage brush (*Artemisia tridentata*) may be mentioned as examples. Annual sage (*Artemisia annua*) is a very common weed in waste places in the cities along and south of the Ohio River. About one third of the total pollen crop at Denver is from sage. This is an indication of what may be encountered throughout the Rocky Mountain region.

#### COMPOSITE FAMILY

In this paper, as in most discussions of hay fever pollens, the ragweeds and sages while members or immediate relatives of the composite family, are classified by themselves, since practically all other composites are insect pollinated and hence of slight or no importance in hay fever. The deep-rooted tradition connected with goldenrod is perpetuated by its wide and showy distribution as well as by the fact that its pollen usually gives positive skin tests when applied to ragweed patients. It is still discussed as a hay fever possibility, in spite of the scarcity of its pollen and all proofs of its almost complete absence from the air. In this study, diligent effort was made to record all composite pollen granules. A few were encountered on the slides from almost every station and it will be noted that the season for them is uniformly late. It is significant that they usually appear on the slides in clumps, so that the statistics for this group of pollens cannot be regarded in quite the same light as those for other pollens whose presence in the air is usually in single granules. In some cases, almost the entire amount found at a station appeared in one large clump. The greatest amount was found at New Orleans where the proportion was 13 per cent of the total pollen count. The amounts and proportions were somewhat larger along the Gulf than farther north. Most of this composite pollen is not from goldenrod. I am certain. Of its true source, I cannot be sure. That found in the South may be from the widely distributed plant locally known as dog fennel.



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(*Eupatorium capillifolium*), from horse weed (*Erigeron canadensis*), from false wormwood (*Parthenium hysterophorus*) or from sneeze weed (*Helenium autumnale*). In the North at this season there are, besides horse weed, numerous species of aster and goldenrod. This group of plants is not very important, either locally or generally.

## ELM

In a previous paper<sup>5</sup> covering clinical and botanic experiences for two seasons at Dallas, the unusual situation was noted of a tree pollen seriously interfering with ragweed pollen therapy. Records are now available for four successive seasons, not only at Dallas but in the surrounding areas. In 1932, as in 1929, there was an acute elm shower centering at Dallas and lasting for about ten days. Slides exposed in 1929 at Mineral Wells, Texas, some 60 miles west of Dallas, show that the elm was as common there as at Dallas. San Antonio records show considerable elm pollen. Some elm pollen was found at Memphis, Tenn., Vicksburg, Miss., Oklahoma City and Little Rock, Ark. As stated,<sup>5</sup> this pollen is from one species of elm (*Ulmus crassifolia*). East of the Mississippi River there occurs another species of fall-pollinating elm (*Ulmus serotina*), which as yet has not proved to be of any practical importance. Occasional granules of elm pollen are encountered during the fall north of the Mason and Dixon line, where it is known that none of these species exist. There is no question but that these pollens are carried out of the South on high southwest winds at the time of the Texas elm season. It may be added that during 1930 and 1931, when rainfall was very much restricted in central Texas, there was no acute elm season and the total amount of the pollen found on the slides was very small. This is, then, a local (if the large area of central and eastern Texas may be considered local) factor to be reckoned with only in favorable seasons.

## HEMP

While hemp (*Cannabis sativa*) belongs to a family that is closely related to the fall-blooming elms of the South, it is as yet of only local distribution and importance. At various places along the Missouri River, as well as along the Mississippi River, there are areas in which hemp is more common than giant ragweed, but Omaha is the only locality investigated in this study in which the plant assumes allergic importance. There is ample clinical evidence of its importance in hay fever,<sup>6</sup> both as a complicating and as a specific factor in Omaha. There are probably other localities in which the plant is prevalent enough to be taken into consideration in hay fever work.

## SUMMARY

The hay fever plants of sufficient distribution to be considered complicating factors in ragweed hay fever are hemp, Palmer's amaranth, Russian thistle, Kochia and the various species of sage.

They are largely confined to the area between the Mississippi River and the Rocky Mountains.

Fall-pollinating grasses are of some importance in the Gulf region and of possible importance farther north.

During favorable seasons in central Texas, elm pollen is of clinical importance.

Hemp is an interesting local hay fever plant at Omaha.

THE DIAGNOSIS AND TREATMENT OF  
ADDISON'S DISEASE

GEORGE A. HARROP, M.D.

ALBERT WEINSTEIN, M.D.

LOUIS J. SOFFER, M.D.

AND

J. H. TRESCHER, M.D.

BALTIMORE

During the past two and one-half years we have treated thirteen cases of Addison's disease by means of the suprarenal cortical extract made according to the method of Swingle and Pfiffner. The diagnosis of each of these cases we have regarded as unequivocal. We have had seven deaths (table 1), and six of our patients are now living (table 2). All of the seven fatal cases have come to autopsy, and the clinical diagnosis of Addison's disease has in each been proved correct. Four were due to cortical atrophy. Of the three due to tuberculosis, case 1 (table 1) was the first one in which treatment was given, and in the light of our later experience, adequate amounts of extract were not administered. The other two patients had advanced tuberculous lesions elsewhere in the body which probably caused death. An earlier report appeared in *THE JOURNAL* a year ago.<sup>1</sup>

We have been greatly puzzled for some time as to the cause of our poorer results, compared to those reported by others, in the use of the cortical hormone in treatment. Our extract has an assay value, when tested on suprarenalectomized dogs, practically equal to that prepared in the Princeton Laboratory and higher than specimens of commercial preparations that we have examined. Indeed, the material that we used during 1930-1931 was made under the direction of Dr. Pfiffner at Princeton. A considerable number of patients have been referred to us for treatment during the last three years in whom, on one ground or another, it has been possible to rule out the presence of Addison's disease. We have come to the conclusion, therefore, that the question of diagnosis may enter into the explanation of our poorer results from this form of therapy. Patients with doubtful pigmentation, loss of weight, fatigability, weakness and hypotension often cause difficulty. Elsewhere we have advanced the view, based on our studies on the suprarenalectomized dog, that certain phenomena, namely, continued hypotension during the remissions, hypoglycemia, and the pigmentation, are associated primarily with lesions of the suprarenal medulla, whereas those seen during the relapse, namely, the marked asthenia, the gastro-intestinal symptoms and the group of phenomena associated with the shock and concentration of the blood so typically seen, are due to deficiency in the cortex. It has been often observed that the duration of life is longer and the severe crises are less frequent in patients in whom pigmentation is an outstanding characteristic, and in whom asthenia and gastro-intestinal symptoms are less marked.

We submit our criteria for clinical diagnosis and, in addition, propose a method for the differentiation of Addison's disease from other conditions that simulate it.

## PIGMENTATION

Definite pigmentation of the skin or mucous membranes is an indispensable sign on which to make the

5 Black, J. H. and Durham, O. C. Elm Pollen as a Complicating Factor in Hay Fever. *J. Allergy*, 1: 501 (Sept.) 1930.  
6 McQuiddy, E. L. Personal communication to the author.

From the Chemical Division of the Medical Clinic, the Johns Hopkins University and Hospital.  
1 Harrop, G. A., Jr. and Weinstein, Albert. Addison's Disease Treated with Suprarenal Cortical Hormone. (Swingle-Pfiffner). *J. A. M. A.* 98: 1525 (April 30) 1932.

diagnosis with assurance. The pigmentation of the mucous membranes in the mouth and on the upper and under surfaces of the tongue is particularly characteristic. When pigmentation does not occur, the clinical diagnosis is questionable and cannot be made with confidence.

A lessening of the degree of the pigmentation has been observed in patients under treatment. This change takes place over a considerable period of time, usually many weeks. We have never observed the dramatic improvements occurring over night which have been reported.

Prof. Max Brödel and his staff have assisted us in the study of the color changes that are observed and have made paintings of selected areas of the skin at various intervals during treatment. When one compares a series of these paintings, it is possible to note the alterations that have occurred. The changes are rather characteristic and consist first in an increase in the proportion of pink in the skin and later in a gradual lightening of the brown component. These changes

## TUBERCULOSIS

Since from 70 to 80 per cent of the cases of Addison's disease are said to be associated with tuberculosis of the suprarenal glands, an attempt to locate evidence of associated tuberculosis is always made. Only two patients in this group had evidences of active tuberculosis. One had active pleuritis, the other tuberculous osteomyelitis and pleuritis. The use of skin tests with old tuberculin is of some value when there is a marked reaction following injections of high dilutions, from 0.001 to 0.0001 mg. In addition, an attempt is always made to demonstrate calcification in the suprarenal glands by means of the x-rays. This procedure is to be viewed with caution because calcified lymph glands may lie in this region, as do areas of calcification in the rib cartilages that overlie the suprarenals in the roentgenogram. Only in one case have we felt reasonably certain of the presence of calcification in the suprarenals.

It is to be recalled that from 10 to 15 per cent of all cases of Addison's disease are associated with atrophy of the suprarenal cortex. Although this pathologic

TABLE 1—Cases of Addison's Disease Treated with Suprarenal Cortical Hormone with Fatal Outcome

Case	Patient	Age	Sex*	Duration of Illness Before Treatment	Duration of Treatment	Number of Relapses	Blood Pressure Change	Gain in Weight	Autopsy Diagnosis
1	O. L.	50	♀	6½ yrs	8 wks	4	None	None	Tuberculosis of suprarenals and fallopian tubes
2	E. S. B.	34	♂	8 mos	7 mos	3	None	None	Atrophy of cortex
3	R. M. C.	36	♂	8 yrs	3 mos	6	None	None	Atrophy of cortex, cirrhosis of liver
4	M. S.	37	♀	4 yrs	17 mos	4	None	None	Atrophy of cortex, acute fibrinous pericarditis
5	M. D.	35	♀	4 yrs	10 mos	2	None	None	Atrophy of cortex
6	G. K.	48	♀	4 yrs	23 days	3	None	None	Tuberculosis of suprarenals, ribs and pleura
7	F. R.	42	♂	8 mos	3 mos	3	None	None	Tuberculosis of suprarenals, lungs, liver and kidneys

\* In the tables ♂ indicates male, ♀ female.

TABLE 2—Cases of Addison's Disease Treated with Suprarenal Cortical Hormone, Showing Improvement

Case	Patient	Age	Sex	Duration of Illness Before Treatment	Duration of Treatment	Number of Relapses	Blood Pressure Change	Gain in Weight	Present Condition	Diagnosis of Suprarenal Lesion
1	D. D.	18	♀	6 yrs	16 mos	5	None	None	Fair	Tuberculosis
2	C. K.	21	♂	14 mos	12 mos	1	None	4.4 Kg	Very good	Tuberculosis (?)
3	O. G.	29	♀	5 mos	10 mos	None	None	None	Good	Tuberculosis
4	A. O.	61	♀	3 yrs	16 mos	1	92/68 to 118/70	9.4 Kg	Good	Atrophy (?)
5	P. G.	39	♂	10 mos	10 mos	None	None	2.2 Kg	Good	Atrophy (?)
6	R. L.	43	♀	9 mos	4 mos	1	None	6.5 kg	Good	Tuberculosis (?)

are never rapid and are due to two factors: the cessation of excessive deposits of pigment and a mechanical wearing away of the outer layer of the skin in which the pigments have been deposited. This method of study of the pigmentation has proved useful, because one frequently gains the impression that the color is lighter, when an inspection of the drawings shows that no definite change is to be detected.

## BLOOD PRESSURE

The blood pressure is usually low, and all but one patient in this group, at some time, had a systolic blood pressure below 90 mm of mercury. The blood pressure is described as falling rapidly when the subject assumes an upright posture. This fall in pressure is said to be associated with a decrease in the pulse pressure, a rise in the pulse rate, and syncope. This type of reaction has been seen in only three patients and disappeared later as their general condition improved. This response is not dissimilar to that seen in many patients suffering from chronic debilitating disease and no doubt is the explanation for the syncope that occurs when these people try to get up and go about their usual activities.

state is quite different from the more common caseous tuberculosis of the suprarenals, the clinical manifestations of the disease are indistinguishable. As a case in point, one of the patients (R. M. C.) had both a brother and a sister who died of pulmonary tuberculosis. As a child, she had cervical glands that drained for some months. We were very suspicious of tuberculosis as the etiologic agent. However, when the case came to autopsy a most striking degree of cortical atrophy was found. Evidences suggestive of tuberculosis elsewhere, therefore, do not definitely prove its presence as the etiologic agent.

## DEXTROROSE TOLERANCE AND SENSITIVITY TO INSULIN

The tolerance to ingested dextrose is generally described as being increased in patients with Addison's disease. However, only one patient in this group showed a striking abnormality. A low fasting blood sugar is often found. In the literature are references to the occurrence of hypoglycemia following the ingestion of dextrose. Systemic reactions are described, associated with lowering of the blood sugar. We noted this in our earlier paper.<sup>1</sup> Because suprarenalectomized

animals are extremely sensitive to insulin and because some of the reactions occurring clinically in the acute relapses resemble those seen in hypoglycemia, an effort was made to see if the effect of small injections of insulin might be made the basis of a reliable diagnostic procedure. The method employed consisted in the intravenous injection of 2 units of insulin and the determination of the blood sugar at frequent intervals. Three of the patients studied had an unusual degree of hypoglycemia during this procedure. It is to be remembered that patients with untreated myxedema, and many with hypophyseal dysfunction as well as certain undernourished persons, are particularly sensitive to insulin. The test has, then, no certain diagnostic significance.

#### ASTHENIA AND MUSCULAR WEAKNESS

Weakness has been striking, and all the patients have been unable to carry on their ordinary activities. The fact that only one patient was anemic is in contrast to the emphasis placed on this sign by Addison in the original description of this syndrome. The pulse, while feeble, is not usually slowed, neither is the body temperature lowered, as a rule, unless the patient is in relapse. However, the general anition is reflected in the basal metabolic rate, which is commonly low, the average value for the group being — 18 per cent. Numbness and tingling in the extremities and pain in the back and thighs are frequent complaints. We regard a history of muscular weakness and fatigability as of prime importance.

#### GASTRO-INTESTINAL SYMPTOMS

The appetite is usually poor, and, as the disease progresses, periods of nausea become a striking feature. Loss of weight is conspicuous. The average weight loss for this group was 30 pounds (13.6 Kg). Vomiting and diarrhea are frequently seen during the course of an acute relapse. Nausea and vomiting should place one on his guard as to the possibility of an impending crisis.

#### THYROID MEDICATION

The acute crises that occur during the course of Addison's disease are precipitated frequently by infections, undue exertion, or drugs, such as thyroid extract, which increase the basal metabolic rate. The sensitivity to thyroid extract was impressed on us when we administered the material to two patients in order to raise the very low basal metabolic rates that were present. In each instance, a relapse was precipitated.

We have come to the conclusion that absolute diagnosis on the basis of any one of the criteria which we have discussed is not possible, and we are inclined to believe that it cannot be made with confidence unless there is definite and characteristic pigmentation, associated with at least one or two of the other features mentioned.

#### USE OF SALT-FREE DIET AS DIAGNOSTIC PROCEDURE

We now wish to propose an additional diagnostic test, based on our animal experiments during the past two years. It has been known for some time that suprarenalectomized dogs that receive injections of sodium chloride survive longer than animals not so treated. Observers have not been wanting who have pointed out that animals dying after removal of the suprarenal glands are in a condition of shock, as evidenced by marked hypotension, lowered body temperature, cardiac failure and hemoconcentration. Unfortunately, the fatal outcome of bilateral suprarenalectomy within a

few days has rendered it impossible to decide with certainty whether the observed condition of shock was due to removal of the suprarenals alone, or whether a decisive role might not be played by the effects of the major surgical procedure or of the anesthesia. Studies made with the aid of the cortical extract indicate definitely that animals with well healed wounds, and maintained in good condition, when thrown into a state of insufficiency by the withdrawal of the injections of extract show a typical course characterized by gradual hemoconcentration (increased blood oxygen capacity, erythrocyte count and volume of packed red cells), a rise in nonprotein nitrogen and in plasma proteins, in the later stages, a fall in blood pressure, basal oxygen consumption and blood flow, and lowered bodily temperature and circulatory collapse.<sup>2</sup> On readministration of the extract, this cycle is reversed and the animal is restored to his previous good condition, thus proving that the symptoms were due solely to withdrawal of the extract.

Accompanying the hemoconcentration, which we regard as the primary event in the train of symptoms that we have just described, there is a fall in total plasma base, plasma chlorides and sodium, while a marked increase occurs in the urinary output of sodium and chloride. The volume of urine excreted is maintained until within a few hours of death. The conclusion is drawn, that the hormone exercises a regulatory influence over the excretion of water, sodium and chloride, and that when this regulation is removed the kidneys waste these components, not alone from the blood plasma, but in even greater amounts from the extravascular tissue fluids. The resulting dehydration is, then, responsible for the symptoms and death from suprarenal insufficiency following withdrawal of the extract. If the regulatory influence over the excretion of sodium and chloride is lost after the injections of the extract have been stopped, it would appear likely that the animal, after the withdrawal of the extract, when it was placed on a salt-poor diet, would go into insufficiency much more rapidly than when the salt intake was normal. Conversely, an animal on a high salt intake should have a much lower maintenance requirement for extract than an animal on a normal salt intake. Such we have found to be the case.<sup>2</sup> Furthermore, animals on a bare maintenance dosage of extract, when placed on a salt-free diet, will show the characteristic clinical, physiologic and chemical evidences of insufficiency, and if they are not allowed to sink too deeply into shock they may recover after the administration of sodium chloride alone.

At the beginning of this study, we kept all of our patients on daily injections of the cortical hormone. They administered the material to themselves by hypodermic injections. However, in June, 1932, three patients were doing exceedingly well on a supply of cortical hormone which later proved to be of no value in keeping suprarenalectomized dogs alive. It therefore seemed important to determine whether or not daily injections of the hormone were necessary for the well being of the patients. Having assured ourselves that the patients were under very close medical supervision, we sent extract of low potency to them but at the same

2 Harrop G. A., and Weinstein Albert. Studies on the Suprarenal Cortex. I. Cortical Suprarenal Insufficiency and the Action of the Cortical Hormone on the Normal and Suprarenalectomized Dog. *J. Exper. Med.* 57: 305 (Feb.) 1933. Harrop G. A., Soffer L. J., Trescher J. H., and Weinstein Albert. II. Metabolism, Circulation and Blood Concentration During Suprarenal Insufficiency in the Dog. *ibid.* to be published. III. Studies on Cortical Function. Plasma Electrolytes and Electrolyte Excretion During Suprarenal Insufficiency. *ibid.* to be published.

time prescribed a diet high in salt. They have been watched for the past nine months under such conditions and, during that time, have continued to gain weight and strength. It is also true that one patient who was under observation in this hospital began to show signs of relapse six weeks after the injections of cortical hormone had been replaced by hypodermic injections of sterile water. Improvement was again noted following the resumption of the injections of potent material. Since that time this patient has been transferred to another hospital, where, again, it is found that daily injections of the hormone are necessary for her well being. In such instances of chronic relapse, of which we have had several, continuous injections of the extract are certainly needed.

The tendency of patients with Addison's disease during the acute relapse to show hemoconcentration, reduction in plasma total base and chlorides and rise in nonprotein nitrogen has been repeatedly observed by ourselves and has recently been reported by Loeb,<sup>3</sup> who rightly stresses the marked drop in plasma sodium. We have previously pointed out the similarity of the Addisonian crisis to the acute suprarenal insufficiency of the experimental animal. That a reaction simulating the crisis of Addison's disease may occur in a patient with Addison's disease following the withdrawal of salt from the diet and that this may prove both of diagnostic and of therapeutic importance is demonstrated by the following observations.

CASE 1—A man, aged 21, white, unmarried noted a lack of endurance two years before. This was followed six months later by a striking increase in skin pigmentation. Physical examination a year before admission revealed characteristic generalized pigmentation of the skin, the buccal mucous membranes and the tongue. There was evidence of recent loss of weight. The blood pressure was 90 systolic, 60 diastolic. There was a positive skin reaction to 0.001 mg of old tuberculin. X-rays revealed calcification in the suprarenals. He was placed on daily injections of the cortical hormone and, over a period of one year, has gained strength and weight (44 Kg.). He was one of the three patients previously mentioned who had received extract of low potency.

When admitted to the hospital for the present study he had no complaints. His physical condition was essentially the same as it was the previous year. He was able to take long walks and do light work. After a preliminary control period, and blood examination, salt was withdrawn from the diet, and fluids were forced to 3 liters a day. Two days later he lost his appetite and began to complain of great weakness. During the afternoon of the fourth day of this low salt diet a second sample of blood was examined with the striking changes in plasma total base, sodium and chlorides noted in table 3. At this time the patient was nauseated and had vomited small amounts, the blood pressure had fallen slightly, and the body temperature was lowered. The picture was clearly that of a relapse. Salt was at once added to the diet but the condition of the patient did not improve, and five hours later saline solution was given intravenously. Since he did not respond promptly, large amounts of extract also were administered both intravenously and subcutaneously. Twenty-four hours later he felt much better, and from then on improvement continued rapidly. The plasma electrolyte pattern did not return to its original form as rapidly as did the evidence of clinical improvement, but it was essentially normal eighteen days later. Studies of intake and output on this patient during the three full days that he was on the low salt diet showed a total chloride intake of 30.6 milliequivalents and an output during the same period of 26.4. During the ten hours preceding the taking of the blood sample, when the plasma chloride concentration was 81.2 milliequivalents per liter the urinary chloride excretion

amounted to 40 milliequivalents. When it is recalled that Ambard considered the normal renal threshold for chlorides to be 96 milliequivalents per liter it will be seen that this low threshold for the excretion of chlorides is quite unusual. The kidney appears to be unable to prevent the excretion of sodium and chloride, and the loss of these ions relative to the sodium chloride intake therefore becomes very large.

CASE 2—A woman aged 61, noted increased pigmentation of the skin five years earlier. Two years before admission she became acutely ill with nausea, vomiting and weakness and lost 37 pounds (16.8 Kg.) within six months. Examination six months later showed characteristic pigmentation of the skin and mucous membranes. The blood pressure was 94 systolic, 68 diastolic. During the period of our observation, which has extended over nineteen months, she administered to herself daily injections of the cortical extract. The extract that she received last spring was of the same low potency as that administered to patient 1, but she has continued to feel well.

At the time of hospital admission she felt exceedingly well. The blood pressure was at the normal level (120 systolic 70 diastolic), and had been at this level for the preceding six months. There had been an excellent gain in weight (9.4 Kg.), and the patient was able to carry on all of her usual activities. Following a control period on a weighed diet, salt was withdrawn but fluids were forced. Forty-eight hours later she felt weak and shaky and almost fainted when she tried to walk. The appetite was good, however. The following day, she felt

TABLE 3—Addison's Disease (Case 1) Changes in Plasma Electrolyte Pattern Produced by a Salt-Free Diet

Day	Blood Oxygen Capacity Volume per Cent	Plasma Total Base Milli equiva lent per Liter	Plasma Sodium, Milli equiva lent per Liter	Plasma Carbon Dioxide Milli equiva lent per Liter	Plasma Chlorides Milli equiva lent per Liter	Plasma Non protein Nitrogen Mg per Cent
1	21.1	149.6	134.8	23.7	106.8	32
Low salt diet on the second third and fourth following days						
5 4 p m	20.8	122.4	100.6	25.4	81.2	39
In severe relapse treated with intravenous saline and cortical extract with prompt improvement during the next 48 hours						
17	23.0	133.8	128.2	24.8	90.8	29
22	20.7	135.4	133.8	30.8	102.4	31
Felt very well and discharged from hospital						

weaker and remained in bed. There was a sharp decline in the intake of food. On the morning of the fifth day she was completely exhausted, was irritable and refused all food. She was nauseated but did not vomit. The blood pressure was lowered (100 systolic, 50 diastolic), and the pulse rate was somewhat elevated. The picture was obviously that of an early acute relapse. The changes in the blood electrolyte structure are shown in table 4. Salt was accordingly added to the diet in large amounts but none was given by vein and no cortical extract was administered. Within the next thirty-six hours she commenced to eat again and felt much better both physically and mentally. Following this, there was a rapid return of appetite and muscular strength.

The production of typical symptoms of the Addisonian crisis with the usual changes in the chemical constituents of the blood of these two patients, and with relief of symptoms without the use of hormone in one case, merely by restoration of salt to the diet, clearly indicates the important role played by sodium chloride and its paramount value in the treatment of the acute relapse.

By way of contrast, the effect on the plasma electrolytes and on the urinary excretion of sodium and chloride of a normal person is shown, following the use of such a salt-free diet.

CASE 3—A man aged 35, was transferred to the metabolism ward following an uneventful recovery from the surgical repair of an indirect inguinal hernia. There were no complaints and the physical examination showed nothing abnormal. After a

<sup>3</sup> Loeb R. F. Chemical Changes in the Blood in Addison's Disease. *Science* 78: 420 (Nov. 4) 1932. Effect of Sodium Chloride in Treatment of a Patient with Addison's Disease. *Proc. Soc. Exper. Biol. Med.* 30: 808 (March) 1933.

preliminary period of observation, he was placed on a salt-free weighed diet for ten days, which he ate with good appetite. The studies of the blood were made prior to the institution of this diet, and on the sixth day and on the tenth day of this regimen. No untoward symptoms were noted throughout the period of observation (table 5). In contrast to the marked changes in the plasma electrolytes noted in the patients with Addison's disease, no changes were noted over a period twice as long in this normal individual, when on a similar diet very low in salt.

While the effect of salt deprivation is thus shown to be of diagnostic value in outspoken cases, the negative

He had noted these during the preceding two months. A few weeks later he developed several furuncles on the legs. Areas of dark brown pigmentation were deposited around these lesions which persisted for weeks. The blood pressure, which was 90 systolic, 30 diastolic on admission, gradually rose to a level of 120/80, and he became active and felt well.

Further studies revealed roentgen evidence of thickened pleura at the left apex. A marked skin reaction to 0.1 cc. of 0.001 mg. of old tuberculin was noted. There was no evidence of calcification in the suprarenals. The basal metabolic rate was -5 per cent. There was hypoglycemia associated with characteristic symptoms three hours after the ingestion of

TABLE 4—Addison's Disease (Case 2) Effect of Salt-Free Diet in Producing Relapse, No Cortical Extract Injections Given

Diet + 8 Gm NaCl	Day	Weight Kg	NaCl Added to Diet * Gm	Urine		Blood							
				Sodium Balance Milli equivalents	Chloride Balance Milli equivalents	Red Blood Cells Millions per C Mm	Plasma Volume per Cent	Oxygen Capacity, Volume per Cent	Plasma Proteins per Cent	Albumin Globulin Ratio	Plasma Sodium, Milli equivalents per Liter	Plasma Chlorides, Milli equivalents per Liter	Plasma Total Base Milli equivalents per Liter
	1												
	2	59.7	8	+8.4	+11.1	4.06	60.0	17.2	6.1	65.3	133.0	103.6	148.5
	3												
	4	58.0	0	-67.1	-79.0								
	5		0	-43.0	-33.4								
	6		0	-2.0	-10.1								
	7	58.4	0	-22.1	-15.5								
	8												
	9		11	+137.1	+140.1	5.35	51.0	19.9	7.2	63.37	120.8	92.2	139.0
	10		11	+137.1	+106.4								
	11		8	+8.6	+0.0								
	12		8	-10.9	-2.7								
	13	59.3	8	+20.4	+26.3	4.86	53.6	18.4	6.0	61.39	130.0	100.2	147.2
	14			+29.1	+26.4								

\* Diet consisted of carbohydrate 160 Gm, protein 50 Gm, and fat 90 Gm, 1600 calories, sodium chloride in diet slightly less than 1 Gm.

TABLE 5—Normal Person (Case 3) Effect on Blood Plasma Constituents and Urinary Sodium and Chloride Output of a Salt-Poor Diet Similar to That Administered in Cases 1 and 2 (Patients with Addison's Disease)

Diet + 9 Gm NaCl	Day	Weight Kg	NaCl Added to Diet * Gm	Urine		Blood							
				Sodium Balance Milli equivalents	Chloride Balance Milli equivalents	Red Blood Cells Millions per C Mm	Plasma Volume per Cent	Oxygen Capacity, Volume per Cent	Plasma Proteins per Cent	Albumin Globulin Ratio	Plasma Sodium, Milli equivalents per Liter	Plasma Chlorides, Milli equivalents per Liter	Plasma Total Base Milli equivalents per Liter
	1												
	2	72.7	0	+7.8	+0.8	5.6	53.5	19.4	6.2	62.58	133.8	101.0	
	3												
	4		0	-62.3	-81.4								
	5		0	-0.6	-6.0								
	6		0	+10.6	+2.5								
	7	71.8	0	+14.7	+10.3	5.29	50.8	21.3	6.0	61.39	130.0	101.8	
	8		0	+14.7	+8.4								
	9	71.7	0	+13.7	+4.7								
	10		0		+2.1								
	11	71.5	0		+10.1	5.62	50.0		6.4	63.37	130.4	100.7	151.2
	12				+4.1								

\* Diet consisted of carbohydrate 210 Gm, protein 75 Gm, and fat 120 Gm, 2200 calories, sodium chloride in diet was less than 1 Gm.

result obtained in another patient in whom Addison's disease was suspected is of interest.

CASE 4—A man, aged 55, white, complained of a cough and sore throat of three days' duration. There had been some blood-stained sputum and mild chills. The appetite had remained good. Fifteen years before he had been a patient in a tuberculosis sanatorium for fifteen months. A daughter had died of pulmonary tuberculosis. During his stay at the sanatorium the blood pressure was noted to be 114 systolic, 80 diastolic, but periodic health examinations since that time had shown the blood pressure to be low.

On admission he was found to be acutely ill with a temperature of 103.4 F and considerable prostration. The temperature fell abruptly twenty-four hours later. It was thought that he had influenza and bronchopneumonia (Pneumococcus type VIII was isolated from the sputum, no acid-fast bacilli were demonstrated). The convalescence was rather prolonged. There was a slight increase in the depth of the skin pigment, but most noteworthy was the presence of many jet black patches of pigmentation on the lips and buccal mucous membranes.

The patient showed a normal response to the insulin tolerance test. There were no striking changes in the blood pressure following alterations in posture. The urine never showed pathologic changes, and tests of the kidney function were all within normal limits.

The patient ate with great relish a salt-free diet for twelve days, during which time he increased in strength and gained 4½ pounds (2 Kg). The response was exactly that of the normal person (case 3). No noteworthy change was observed in the plasma electrolyte pattern, and the sodium and chloride urinary output dropped promptly, to spare these constituents when the salt intake was restricted. Because the evidence of suprarenal insufficiency was not conclusive, he has not been given the cortical hormone and is not included in this present series of cases. He has remained well to date.

We feel that, in the last case cited, the pigmentation is quite characteristic of Addison's disease, and the long standing hypotension and definite association with tuberculosis is noteworthy. Elsewhere, we have

commented on the likelihood that pigmentation and hypotension may be due primarily to disease of the suprarenal medulla rather than to that of the suprarenal cortex. Tuberculous lesions usually first attack the medullary portion of the gland, and it is possible that such may be the case here and that the cortex is not as yet vitally affected. The patient has never suffered from what we regard as true symptoms of cortical insufficiency—hemoconcentration, grave asthenia, severe gastro-intestinal symptoms and "shock." On the other hand, had this patient been treated from the first with cortical hormone, the great improvement which he has shown, since recovery from influenza, might well have been erroneously ascribed to the use of the extract.

We believe that the use of a salt-free diet is of definite diagnostic value in determining the presence of Addison's disease, and especially in indicating the danger of relapse. It may be in this condition of practical use in determining the patient's requirements for treatment by cortical extract. We should hesitate to use it, however, without the closest medical supervision and without cortical extract at hand for emergency use. The importance of a liberal salt intake for patients with Addison's disease seems obvious.

#### TREATMENT WITH HIGH-SALT DIET

We have now four patients under study who are receiving diets high in salt content. They receive, in addition, from 1 to 6 Gm of sodium chloride in capsules, daily, but are being given no injections of the cortical extract. All of this particular group state that they feel stronger and tire less easily than at any time since coming under our observation. Two, who had previously suffered from persistent recurring nausea, and occasional attacks of vomiting, even while receiving daily injections of the cortical hormone, are now practically free of these symptoms. The weight gain in one patient is quite definite in contrast to his failure to gain when on previous treatment with the cortical extract alone. We avoid the administration of salt in such quantities as to cause subcutaneous edema, although there would seem to be no particular harm in this from the standpoint of the disease itself. The production of diarrhea or of nausea from the use of salt must also be avoided. Patients with gastro-intestinal symptoms tend to show lowered plasma total base and plasma sodium concentrations, and these are raised, when present, to more nearly normal levels on the high salt regimen. When the nonprotein nitrogen (or urea) concentration is elevated, the plasma chloride level is usually lowered, and these abnormalities are also affected by the higher salt intake. We use the changes in these plasma electrolyte values as one guide to the amount of salt required in treatment. When salt alone does not restore the proper plasma electrolyte levels, cortical extract should also be employed.

During the remissions of the disease we insist on patients avoiding undue exertion and protecting themselves against exposure to infection. We recommend diets as high in caloric value as possible, liberally salted, and, if necessary, we give several grams of additional salt in capsule form. In addition, we advise the use of from 1 to 3 ounces (30 to 90 cc) of cottonseed oil daily. The latter treatment is based on the fact that the dosage of cortical hormone required to maintain suprarenalectomized dogs in a normal state is materially lowered when cottonseed oil is given simultaneously. It increases the caloric intake and is usually well tolerated. In the treatment of the acute relapse, we

stress as previously<sup>1</sup> the great importance of early diagnosis and the prompt vigorous treatment with salt by mouth or physiologic solution of sodium chloride and dextrose solution intravenously, and the use of large amounts of cortical extract.

#### CONCLUSIONS REGARDING HORMONE THERAPY

We believe that the clinical value of injections of the cortical hormone as a routine treatment during the remissions of Addison's disease has not been satisfactorily demonstrated. So far as our experience indicates, however, there is no danger whatever in the use of extract if this seems desirable. We would stress again the fact that we have never seen any untoward or toxic effects as a result of the treatment by cortical extract although we have used it in many types of patients, some of whom have received very large doses both subcutaneously and by vein. We do not doubt, however, that faulty preparation may lead to dangerous consequences. The extract has no definite effect on hypotension or on the pigmentation. We are not convinced that it has any effect on nutrition and weight. The chief value of the cortical extract lies in the treatment of the relapse, the symptoms of which we regard as fundamentally those of shock, and due primarily to cortical deficiency. In patients showing such symptoms for longer or shorter periods, injections of the cortical hormone extracts are of definite value and may be of vital importance.

## BRUCELLA (ALCALIGENES) INFECTIONS IN MAN

### THE INTRADERMAL REACTION AS AN AID IN DIAGNOSIS

H. C. YECKEL, M.D.

AND

O. D. CHAPMAN, M.D.

SYRACUSE, N. Y.

Our object in this study was to ascertain, if possible, the value of the intradermal test as an aid in the diagnosis of undulant fever as it occurs in this locality.

Since the pioneer studies of Fleischner and Meyer<sup>1</sup> in 1918 and Burnet<sup>2</sup> in 1922, a number of workers have studied this reaction, some using bacterial extracts or filtrates similar to Burnet's "melitin," others using killed bacterial suspensions, the two groups agreeing as to a high percentage of positive results in definite infection but disagreeing somewhat concerning so-called false positives. Leavell and Amoss<sup>3</sup> give a very good analysis of this work and state that "the specificity of the tests has been the subject of the greatest contention. The consensus seems to be that the bacterial suspension gives fewer false positive reactions than the filtrate. In fact, only a few false positive reactions with the suspension have been reported." Levin<sup>4</sup> used a fat free abortus protein prepared by extracting the abortus organism with alcohol and ether similar to the method

From the Department of Medicine and from the Department of Bacteriology, Hygiene and Sanitation, Syracuse University College of Medicine.

<sup>1</sup> Fleischner, E. C., and Meyer, K. F. The Bearing of Cutaneous Hypersensitiveness on the Pathogenicity of *Bacillus Abortus-Bovinus*. *Am. J. Dis. Child.* 16: 268 (Oct.) 1918.

<sup>2</sup> Burnet, E. Diagnosis of Mediterranean Fever by the Intradermal Reaction. Action of the Filtrate of Culture of *M. Melitensis*. *Arch. Inst. Pasteur de l'Afrique du Nord* 2: 187, 1922. A New Method of Diagnosing Malta Fever. *Compt. rend. Acad. Sci.* 174: 421 (Feb. 6) 1922.

<sup>3</sup> Leavell, H. R., and Amoss, H. L. The Endermic Reaction in *Brucella* Infections. *Arch. Int. Med.* 48: 1192 (Dec.) 1931.

<sup>4</sup> Levin, William. The Intradermal Test as an Aid in the Diagnosis of Undulant Fever. *J. Lab. & Clin. Med.* 16: 275 (Dec.) 1930.

used by Fleischner and Meyer<sup>1</sup> with good results. Leavell and Amoss<sup>2</sup> used both suspensions and extracts with the result that they concluded that 'heat killed suspensions seem to have more specific action than bacterial filtrates'.

Following the suggestions of Giordano,<sup>3</sup> we have used the killed bacterial suspensions

#### PROCEDURE

*Brucella* (*Alcaligenes*) *abortus* strain 80 obtained from Carpenter in 1927 was grown on beef infusion agar slants for forty-eight hours and emulsified in physiologic solution of sodium chloride. This suspension was then killed by heat (60 C for sixty minutes), properly controlled, sufficient phenol added to bring the final concentration to 0.5 per cent and then diluted with 0.5 per cent phenolized physiologic solution of sodium chloride to the density of barium sulphate standard I. One-tenth milliliter of this phenolized heat killed bacterial suspension was injected intradermally in the test

#### INTERPRETATION OF REACTIONS

Contrary to previous observers we feel that the optimum time to read the result of the intradermal test is on the fourth day, approximately ninety-six hours after the injection.

We find that the false positive reaction (nonspecific) begins as a small circumscribed area of redness at the site of injection at about twenty-four hours and disappears within the next twenty-four hours so that at the end of forty-eight hours very little evidence remains. At approximately this time the truly positive reaction begins to show redness and slight induration, increasing so that by the fourth day the area is about 5 cm. in diameter, is elevated about 1 cm., is tender and shows some local heat. Usually there is no general evidence of unusual fever or malaise. The area remains in this condition, showing very little change, for about seven to fourteen days, except that the tenderness gradually subsides. The redness and swelling then gradually recede and by the end of the fourth week there remains a residue of slightly brownish discoloration or pigmentation which is not tender to the touch. In a few cases there appeared to be a redness which extended up the arm in streaks similar to a lymphangitis, but suppuration or necrosis did not occur. These positive reactions were very uniform in their time of appearance, their intensity (redness, elevation and induration) and their time of recession. We have had but one case that manifested a generalized reaction with fever, malaise and a skin eruption (erythema brucellum) on the fourth day.

There was one other type of reaction which might be classed as slightly positive by some observers. This reaction resembled a true positive with the exception that it usually appeared on the second day, as an area of redness smaller in size, with practically no elevation, induration or tenderness, and began to recede at about the seventh day, so that by the tenth to the twelfth day it had completely disappeared. This reaction was particularly manifest in those cases of syphilis under intensive antisyphilitic treatment. We do not feel that this reaction is indicative of brucella infection.

We performed 250 intradermal tests using this antigen. In the first 150 tests, two antigens were used, the *abortus* antigen described and a *melitensis* antigen prepared in a like manner from *Brucella melitensis* 451. As practically no difference was found in the results

obtained with these two antigens, the *melitensis* antigen was discontinued.

Fourteen (5.6 per cent) of these tests were read as definite positives. Eight (3.2 per cent) of these tests were read as pseudopositives. Two hundred and twenty-eight (91.2 per cent) of these tests were read as negatives. This group included the following list of diagnoses:

Typhoid	Carcinoma of stomach, pelvis
Scarlet fever	Diabetes mellitus
Diphtheria	Marked secondary anemia
Tuberculosis	Primary anemia
Syphilis (treated and untreated)	Cholecystitis
Gonococcal vaginitis	Cholelithiasis
Follicular tonsillitis	Cardiac disease
Pyelitis (colon bacillus)	Chronic nephritis
Arthritis	Arteriosclerotic disease
Septicemia	Hodgkin's disease
Staphylococcus aureus	Bronchial asthma
Streptococcus hemolyticus	
Streptococcus viridans	
Pyocyanus	

It might be emphasized that none of the patients were disturbed by the positive tests. The use of a strain of brucella, such as *abortus* 80, might be recommended for such intradermal tests, because it has been on laboratory medium for approximately ten years and undoubtedly has lost some of its toxicity. If a freshly isolated strain were used, one might obtain such alarming reactions as to disturb both the patient and the clinician.

#### COMMENT

It is interesting to note that of all the positive reactions there was only one case that did not show a possible undulant fever history or source of infection. This patient was suffering from an orthopedic condition and nothing in his history would suggest undulant fever.

Two other cases are of interest. One, a man who gave a history of malaria, but during this illness he had no periodic chills but did have excessive sweating. The other, a woman with a history of typhoid. This illness was also characterized by excessive sweating. In both of these cases the history was obtained without asking leading questions.

#### SUMMARY AND CONCLUSIONS

- 1 The intradermal reaction is a definite aid in the diagnosis of brucella infection in man.
- 2 The test is harmless and does not disturb the patient.
- 3 Negative agglutination and intradermal reactions definitely exclude clinical undulant fever.
- 4 The skin remains sensitive to the specific antigen long after the active infection.
- 5 In the presence of a negative agglutination reaction, the intradermal reaction may be positive and thus lead to a definite diagnosis.
- 6 *Brucella abortus* 80 is a good antigen to use for the intradermal test. It is not necessary to make a series of tests using two or more antigens.
- 7 For proper interpretation, the result must be read at approximately the ninety-sixth hour.
- 8 The nonspecific reactions usually appear within the first twenty-four or forty-eight hours and disappear by the seventy-second or ninety-sixth.
- 9 A positive reaction may mean a former infection.

Medical Arts Building

STREPTOCOCCIC SEPSIS COMPLICATING  
RECOVERY FROM PNEUMOCOCCIC  
PNEUMONIA

## REPORT OF THREE CASES

JOHN W PARSONS, MD

PHILADELPHIA

AND

WALTER K MYERS, MD

BOSTON

Severe streptococcic infections are known to follow pneumococcic pneumonia with considerable frequency. Soon after the differentiation between pneumococci and streptococci and the recognition of the former as the principal etiologic agent in lobar pneumonia, Jaccoud<sup>1</sup> demonstrated that streptococci may be found as secondary invaders, causing purulent complications. Netter<sup>2</sup> mentions streptococcic septicemia as a fatal complication during convalescence from lobar pneumonia. Cole and MacCallum,<sup>3</sup> Cumming, Spruit and Aten<sup>4</sup> and Clendening<sup>5</sup> found streptococcic infections to be relatively frequent during convalescence from lobar pneumonia in the army base hospitals. More recently, Avery, Chickering, Cole and Dochez,<sup>6</sup> Johnston and Morgan,<sup>7</sup> Cole,<sup>8</sup> Sutliff and Finland<sup>9</sup> and others have noted occasional cases in which the hemolytic streptococcus was the cause of fatal complications during lobar pneumonia.

The pathologic changes in the lungs of patients from whom the pneumococcus was recovered during the acute stage of lobar pneumonia but from whom the streptococcus was obtained in cultures made at autopsy have been described by MacCallum.<sup>10</sup>

## REPORT OF CASES

Three cases, presenting clinical pictures similar in mode of onset, course and bacteriologic results, are reported here to call attention to the invasion of the hemolytic streptococcus leading to illness and death some days following recovery from lobar pneumonia.

**CASE 1**—An American-born white man, aged 30, was admitted to the hospital complaining of chills, fever and cough. He had been well until four days before entry when, following exposure to cold and dampness, he noticed general malaise, coriza and a nonproductive cough. Twenty hours before admission he was seized by a severe shaking chill, the cough became more frequent with the production of a large amount of bloody sputum and he felt a severe, stabbing pain just below the right nipple. Following the chill, the patient felt extremely ill; he perspired freely and experienced severe gripping abdominal pains associated with nausea. He vomited several times.

From the Thorndike Memorial Laboratory, Second and Fourth Medical Services (Harvard), Boston City Hospital and the Department of Medicine, Harvard Medical School.

<sup>1</sup> Jaccoud F S. Sur infection purulente suite de pneumonie. *Compt. rend. Acad. d. sc.* 102: 1143 (June) 1886.

<sup>2</sup> Netter J A. Maladies aiguës du poulmon in Charcot Bouchard et Brissaud. *Traité de médecine* Paris 4: 886 and 1023 1893.

<sup>3</sup> Cole Rufus and MacCallum W G. Pneumonia at a Base Hospital. *J. A. M. A.* 70: 1146-1156 (April 20) 1918.

<sup>4</sup> Cumming J G, Spruit C B and Aten E J. Streptococcic Pneumonia. *J. A. M. A.* 72: 704-707 (March 8) 1919.

<sup>5</sup> Clendening Logan. Reinfection with Streptococcus Hemolyticus in Lobar Pneumonia. Measles and Scarlet Fever and Its Prevention. *Am. J. M. Sc.* 156: 575-586 (Oct.) 1918.

<sup>6</sup> Avery O T, Chickering H T, Cole Rufus and Dochez, A R. Acute Lobar Pneumonia. Prevention and Serum Treatment. *monograph 7* Rockefeller Institute of Medical Research 1917.

<sup>7</sup> Johnston R A and Morgan H J. Acute Lobar Pneumonia and Hematogenous Puerperal Infection. *Bull. Johns Hopkins Hosp.* 33: 106-109 (March) 1922.

<sup>8</sup> Cole, Rufus. Serum Treatment in Type I lobar Pneumonia. *J. A. M. A.* 97: 741-747 (Sept.) 1929.

<sup>9</sup> Sutliff W D and Finland Maxwell. Type I Lobar Pneumonia Treated with Concentrated Pneumococcus Antibody (Felton). *Clinical Course* *J. A. M. A.* 96: 1465-1469 (May 2) 1931.

<sup>10</sup> MacCallum W G. The Pathology of the Pneumonia in the United States Army Camps During the Winter of 1917-1918. *monograph 10* Rockefeller Institute of Medical Research 1919.

The patient was well nourished and well developed and was obviously very ill. The face was flushed, the mucous membranes and nail beds were slightly cyanotic, and the respirations were rapid. There were paroxysms of coughing productive of a large quantity of tenacious brown sputum flecked with blood. Examination of the chest revealed the early signs of consolidation of the lower lobe of the right lung.

The following day the physical signs were those of frank consolidation of the right lower lobe and roentgen examination showed dense consolidation of that area. Sputum typing at the time of admission revealed pneumococcus type I, and specific serum therapy was instituted forty-five hours after the onset of the pneumonia. A blood culture, taken immediately prior to the administration of Felton's concentrated antibody contained pneumococcus type I and repeated cultures thereafter showed no growth.

The patient was markedly prostrated, though he improved rapidly following a critical drop in temperature on the seventh day of his illness. The temperature rose to 100 F on the ninth and tenth days. An abscess on the right arm, at the site of an intramuscular injection of caffeine sodiobenzoate was incised on the twelfth day with the evacuation of about 30 cc. of yellow pus smears of which showed gram-positive diplococci but which on culture yielded only *Bacillus welchii*. From the twelfth to the fourteenth day there were mild joint pains, which were interpreted as a manifestation of serum sickness. The patient was subjectively well for the following three days. Physical examination revealed signs of resolution over the

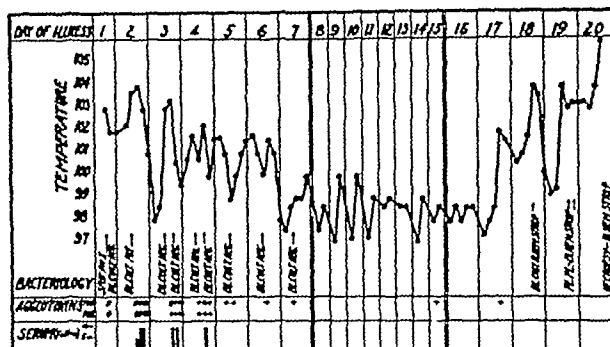


Chart 1—Course of illness in case 1

affected lobe, no evidence of fluid in the pleural cavity, and a healing incision on the right arm.

On the afternoon of the seventeenth day the temperature rose suddenly to 102 F, with corresponding elevations in the pulse and respiratory rates. The patient complained of chilly sensations, pains in the calves of the legs, and nausea. He vomited several times that day. There was an erythematous rash over the anterior wall of the chest. The following day the temperature reached 104 F, and a blood culture taken at this time revealed beta hemolytic streptococci, 12 colonies per cubic centimeter of blood.

On the morning of the nineteenth day there were signs of fluid in the right pleural cavity. Exploratory thoracentesis was productive of 10 cc of amber fluid, which showed many polymorphonuclear leukocytes and gram-positive cocci on smear. Later that day 430 cc. of similar fluid was withdrawn. Both specimens contained beta hemolytic streptococci in pure culture.

The patient sank very rapidly, and on the morning of the twentieth day his pulse became weak and too rapid to be counted accurately. He lapsed into coma and died that evening.

The urine on admission and on succeeding days showed a very slight trace of albumin. During the terminal febrile episode, in spite of adequate fluid intake, the urinary output steadily decreased in amount to a few ounces of bloody fluid that showed a high specific gravity, a heavy coagulum on boiling and numerous white and red blood cells and granular casts.

The leukocyte count was normal on admission and rose to 20,000 per cubic millimeter within a few days, but, while decreasing during the convalescent period it remained above normal. The count rose to 30,000 per cubic millimeter just before death.

The postmortem examination performed by Dr J H Peers, was limited to the contents of the thoracic cavity. The right pleura' cavity was almost completely obliterated by a layer of recent fibrinous exudate up to 4 mm in thickness posteriorly. There was no appreciable free fluid. The fibrinous exudate extended in a thin layer between the right lower and middle lobes. The right lower lobe and the posterior two thirds of the right upper lobe were solid and airless. On cut surface these portions were of a deep red with thickly scattered gray points. The right upper lobe and the left lung showed only a moderate degree of congestion. The left pleura was smooth and glistening. The pericardium contained a small amount of slightly

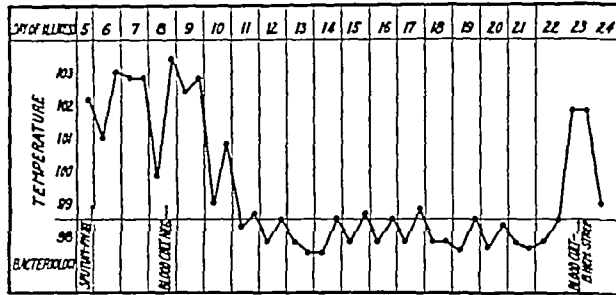


Chart 2—Course of illness in case 2

turbid fluid but no fibrin. There were numerous small subepicardial hemorrhages, most numerous over the left ventricle.

The microscopic examination of the unconsolidated portions of the lung showed very intense congestion of the interalveolar capillaries. The alveoli contained a small amount of serous exudate with a few shreds of fibrin, a few polymorphonuclear leukocytes and numerous pigment-filled monocytes. There were scattered small hemorrhages. Gram-Weigert preparations of this area showed a few gram-positive cocci in short chains in the exudate and very rarely in the interalveolar septums. The consolidated portions showed moderate congestion and hemorrhage and various stages of resolution. There were scattered areas of organization of moderate age. The overlying pleura was covered by a compact layer of fibrin. Gram-Weigert preparations of the resolving areas showed no organisms.

Beta hemolytic streptococci were recovered in pure culture from the heart's blood and from the right lung and pleura.

**Summary**—A man, aged 30, entered the hospital twenty hours after the onset of lobar pneumonia. Pneumococcus type I was recovered from the sputum and blood. Serum therapy was given, with slow recovery and mild serum sickness. After ten days fever and malaise suddenly developed, and soon marked prostration with empyema of the right pleural cavity followed. Cultures of the blood and empyema fluid showed beta hemolytic streptococci. Death occurred on the twentieth day after the onset of pneumonia.

**CASE 2**—A Negro, aged 60, was admitted to the hospital complaining of chills, fever, pain in the chest and a cough of four days duration. For the preceding month he had had a persistent 'head-cold'. Four days before entry he was suddenly seized by three successive chills of approximately fifteen minutes' duration each. Shortly afterward he noticed a stabbing pain in the right side of the chest, a pain which was exaggerated by deep breathing and by a cough, which became very difficult and frequent. There was a moderate amount of yellow mucoid sputum. The pain in the chest was less severe, and the patient was subjectively improved at the time of entry.

The patient was well developed and well nourished, and was very ill. The skin was hot and moist, the tongue coated and the pharynx moderately injected. The thorax showed the physical signs of consolidation of the entire right lung, which was confirmed by roentgenologic examination. Sputum culture on the day of admission showed that pneumococcus type III was the predominating organism. Blood culture on the eighth day of illness was negative.

The patient's condition remained essentially unchanged until the eleventh day of illness when a fall in temperature and appreciable subjective improvement occurred. The temperature

remained normal during the following days and resolution of the consolidated lung progressed rapidly. The patient gained strength and was considered well on the twenty-second day of his illness. The following morning, however, there was a sudden elevation of temperature to 102 F, the pulse became soft and rapid, the patient was extremely ill. There were signs of consolidation at the base of the left lung. Beta hemolytic streptococci were obtained from blood culture. He died on the twenty-fourth day after the onset of the pneumococcal pneumonia.

The urine examinations were repeatedly negative. The leukocyte count was 15,900 per cubic millimeters on admission, fell to normal later, and rose to 36,700 per cubic millimeters the afternoon before death. The Kahn reaction was positive.

Permission for autopsy was refused.

**Summary**—A Negro, aged 60, was admitted to the hospital on the fifth day after the onset of lobar pneumonia. Pneumococcus type III was obtained from the sputum. A critical fall in temperature occurred on the eleventh day of illness. Suddenly prostration and fever developed on the twenty-third day, associated with consolidation at the base of the lung opposite to that previously involved. A culture of the blood yielded beta hemolytic streptococci. Death occurred on the twenty-fourth day of illness.

**CASE 3**—A housewife, aged 41, was admitted with the complaint of pain in the left lower portion of the chest. For three weeks she had been troubled with a moderately severe cough. Five days before entry she had experienced a severe shaking chill of thirty minutes' duration. This was followed by sharp and continuous pains in the thighs and lumbar region. There was a disturbing nonproductive cough. There was little change until the day before entry, when she was seized by a sharp knife-like pain in the right lower portion of the chest, which made breathing almost intolerable and was more severe on coughing.

There had been mild polyuria and nocturia during the preceding five years. She had been treated for a gastric ulcer following a moderately severe hematemesis nine years previously.

The patient was well developed and well nourished and appeared acutely ill and in considerable respiratory distress. The cheeks were flushed, the lips were dry and parched, the tongue was coated, dry and furrowed. The thoracic signs were those of consolidation of the right lower lobe of the lung and a coarse friction rub in the right axilla.

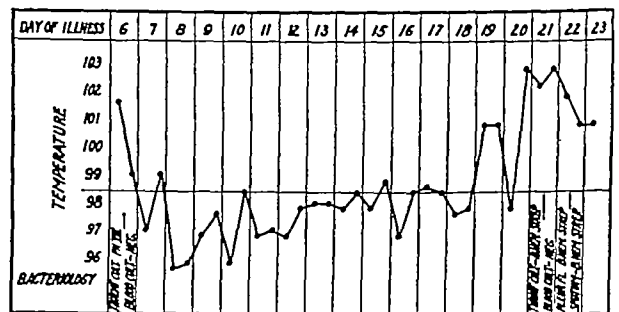


Chart 3—Course of illness in case 3

Pneumococcus type VIII<sup>11</sup> was grown on culture of the material from the pharynx. The blood culture remained sterile. The leukocyte count was 17,000 per cubic millimeter. The temperature fell by crisis the day after entry, or the seventh day of her illness, with concomitant subjective improvement. It was found that she had mild diabetes mellitus, which was easily controlled by insulin in moderate dosage.

<sup>11</sup> Cooper, Georgia, Edwards, Marguerite and Rosenstein, Carolyn. The Separation of Types Among the Pneumococci Hitherto Called Group IV and the Development of Therapeutic Antisera for These Types, J. Exper. Med. 48: 461-474 (March) 1929. Cooper, Georgia, Rosenstein, Carolyn, Walter, Annabel and Peizer, Lenora. The Further Separation of Types Among the Pneumococci Hitherto Included in Group IV and the Development of Therapeutic Antisera for These Types, Ibid. 55: 531-554 (April) 1932.

For eleven days the temperature remained normal and the abnormal signs in the right lower thorax had practically disappeared, when the temperature suddenly rose to 101 F. Only a mild inflammation of the tonsils and pharynx could be detected on physical examination. The following morning, however, a severe chill was followed by a rise in temperature to over 102 F. The skin was flushed. There were signs suggesting consolidation at the base of the right lung posteriorly. The patient began to vomit. There was evidence of acidosis in the absence of hyperglycemia. The sputum was profuse and bloody, and showed beta hemolytic streptococci on culture. The signs at the base of the right lung soon became those of fluid in the pleural cavity, which were confirmed by roentgenologic examination. Fifty-five cubic centimeters of a serosanguineous fluid was obtained by thoracentesis. Cultures of this fluid showed beta hemolytic streptococci. The patient died on the twenty-third day of her illness.

Postmortem examination was not permitted.

**Summary**—A woman, aged 41, was admitted six days after the onset of lobar pneumonia with pneumococcus type VIII (Cooper) in the sputum. Mild diabetes mellitus existed. A critical fall in the temperature occurred on the seventh day of illness, with apparent recovery. A sudden elevation of temperature developed on the nineteenth day with signs of consolidation at the base of the right lung, followed by empyema. Beta hemolytic streptococci were recovered from the throat, sputum and empyema fluid. Death occurred on the twenty-third day of illness.

#### COMMENT

Case 1 was treated with Felton's concentrated antibody. The dosage was regulated by the demonstration of specific agglutinins in the patient's blood, a method described by Sabin.<sup>12</sup> Agglutinins against the infecting organism were found to persist after the administration of 55 cc of serum, even after the onset of the streptococcic infection. The pneumococcic infection had been very severe, and the patient had just begun to recover his strength when the fatal streptococcic infection became manifest seventeen days after the onset of pneumonia. This infection progressed rapidly to death three days later.

Cases 2 and 3 were similar in many respects to case 1. The onset of the streptococcic infection in each occurred about twelve days after the subsidence of the original pneumococcic infection and at a time when the patient's recovery seemed assured. The onset in each instance was explosive with a steadily failing course to death within a few days. Cases 1 and 3 were characterized by streptococcic pleurisy on the side of the resolving pneumonia. In case 2, consolidation of the opposite lung was found to have occurred.

The event we have described should be borne in mind in the consideration of febrile complications that occur during convalescence from lobar pneumonia caused by pneumococci. Streptococcic sepsis may be confused with various pneumococcic complications, chief of which are empyema and recrudescence of pneumonia. Pulmonary infarction may also be suspected. Empyema due to the pneumococcus rarely has such an explosive onset, it usually starts in an insidious manner, and signs of fluid in the pleural cavity frequently precede the fever. Recrudescence of lobar pneumonia occurs rarely, usually as the result of infection by a different organism than that originally found and with symptoms more like the onset of the primary pneumonia. Thomas<sup>13</sup> demonstrated that remission of the original type of pneumococcic infection during convalescence

is unlikely because of acquired specific immunity. Pulmonary infarction resulting from thrombosis of a large blood vessel in the consolidated or resolving lobe is a not uncommon late complication of the disease. While its onset may be accompanied by violent symptoms, sudden stabbing pain, bloody sputum and dyspnea, it is more commonly an afebrile complication until secondary infection of the necrotic area occurs with subsequent abscess formation or gangrene. The presence of bloody sputum at the time of onset of the streptococcic infection in case 3 suggested the occurrence of pulmonary infarction, and this may have occurred.

The mode of infection by streptococci in convalescent patients is not completely understood. The organisms may be inhabitants in the mouth and nasopharynx of the patient or may be introduced by contact with individuals carrying streptococci, as was suggested by Cole and MacCallum<sup>3</sup> and by Cumming, Spruit and Aten.<sup>4</sup>

#### CONCLUSIONS

Cases such as the three similar fatal cases of beta hemolytic streptococcic infection during convalescence from lobar pneumonia due to pneumococci that have been reported present a distinct clinical picture. A small proportion of the deaths recorded as due to lobar pneumonia can be attributed to streptococcic sepsis arising during convalescence from lobar pneumonia.

## AMIDOPYRINE IN THE TREATMENT OF MEASLES

MAXWELL P. BOROVSKY, M.D.

AND

FREDERICK STEIGMANN, M.D.

CHICAGO

In recent years, medical literature has included several reports on the specificity of amidopyrine (pyrimidin) in the treatment of measles.

Amidopyrine as a therapeutic agent in measles was first mentioned by Loewenthal<sup>1</sup> in 1924. In his report he stated that amidopyrine, when administered at or before the appearance of the rash, will cause (1) reduction of temperature to normal or nearly normal within twelve hours, (2) inhibition of eruption, at times completely, almost always partially, (3) immediate euphoria, (4) clearing up of conjunctivitis, coryza and cough within a day or two.

On these studies Loewenthal concluded that "the drug acts as promptly in measles as quinine does in malaria, or the salicylates in rheumatic fever. A drug which checks the onward march of the symptoms, and particularly the development of the rash, surely has the right to be called a specific drug."

Independent of Loewenthal's observations and discovery of amidopyrine as a "specific for measles," Dr. Hoyne<sup>2</sup> had used this drug in a small outbreak of measles in Chicago and later on as a routine treatment of the disease in various hospitals of this city. In a report of his observations (1929) he mentioned that amidopyrine is a most remarkable remedy in the treatment of measles and that he thought it acted as a "specific." He considered amidopyrine the most important therapeutic agent in the treatment of measles.

12. Sabin A. B. The Microscopic Agglutination Test in Pneumonia. Its Application to Rapid Typing and to Control of Serum Therapy. *J. Infect. Dis.* 46: 469-484 (June) 1930.

13. Thomas H. V. Jr. Recurrent Type I Pneumonia. Serum Treatment of Two Attacks One Month Apart. *Am. J. M. Sc.* 161: 103-109 (Jan.) 1921.

From the Cook County Contagious Hospital and the Chicago Medical School.

1. Loewenthal, Max. *Brit. M. J.* 2: 51 (July 12) 1924. 1: 1198 (June 28) 1930.

2. Hoyne, Archibald. *Illinois M. J.* 66: 254 (Oct.) 1929.

because (1) it reduced temperature without injury to the patient, (2) it allayed cough and appeared to lessen the irritation of all mucous membranes (3) it was of value in lessening complications and therefore tended to shorten the course of the disease and to lower the mortality rate

Following the reports of Loewenthal and Hoyne, several other reports dealing with amidopyrine as a therapeutic agent in measles appeared in the British medical literature. Thus Gladstone<sup>3</sup> in 1930 reported a series of twenty-four cases treated with amidopyrine. He reported a temperature drop within the first twenty-four hours with no respiratory complications and further stated that nearly all patients were well on the fourth day. He also stated that when the drug was given in the Koplik spot stage a rash was scarcely evident. He believed that the drug was of particular value for younger individuals, but not so effective for older patients.

In support of Gladstone's observations, Urquhart and Winchester<sup>4</sup> reported six cases treated with amidopyrine in which there was also a fall in temperature within twenty-four hours and disappearance of the cough and bronchitis. They thought the drug almost a "specific" but thought that it might cause a hemorrhagic rash.

Collier,<sup>5</sup> in reporting a group of twenty-six cases of measles treated with amidopyrine, states that, of five patients who were thus treated during the stage of invasion on appearance of Koplik spots, only two developed a rash and all were well in two days. Sixteen patients treated at the onset of the rash showed an immediate reduction of temperature and they were well in from three to four days, while five cases treated in various late stages showed only little, if any, beneficial effect. On these observations he concluded that the marked features of this use of amidopyrine are (1) fall of temperature within the first day, (2) alleviation of cough, and (3) absence of complications. He believed that if the drug is administered in the stage of Koplik spots the disease is aborted. He stated, however, that the type of the case, mild or severe, determined the result.

In a later paper, Collier, in collaboration with Ronaldson<sup>6</sup> reported 150 cases of measles treated with amidopyrine and concluded that amidopyrine is of most value in early cases, that it lessens the tendency to pneumonia and that it prevents complications. They stated that they could not substantiate the claim that the drug exercises a specific action or that it causes an abortion of the rash. They believe that the drug has no constant effect on the exanthem of measles. They therefore consider amidopyrine a valuable adjuvant in the treatment of measles and think that its action is chiefly antipyretic but that it appears to have some influence on other symptoms of the disease.

Attlee<sup>7</sup> reported 129 cases, in 9 of which amidopyrine was given. In the cases in which amidopyrine was not administered there was a rise in temperature with the appearance of the rash and then an abrupt fall within twenty-four hours, only six cases showed some complications (bronchitis in four, bilateral otitis in two). In the nine cases in which amidopyrine was

given there was a slower appearance of the rash with a longer duration of the fever, while the complications were much more frequent. He concludes, therefore, that amidopyrine should not be given in measles.

There is apparently a conflict of opinion as to the value of amidopyrine in the treatment of measles. One group thinks that amidopyrine is a "specific," while another believes that it should not be used at all. A third group considers amidopyrine merely an adjuvant in the treatment of this disease, influencing it only as would any other antipyretic.

In order to observe the action of this drug first hand in the prophylaxis and treatment of measles, a series of 194 cases was studied in the contagious department of Cook County Hospital during the first six months of 1931. Alternate patients entering the institution

TABLE 1—Day of Return to Normal Temperature Level in Group of Patients Receiving and Those Not Receiving Amidopyrine

Stage of Eruption on Admission	Number of Patients with Day of Return to Normal Temperature Level										
	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th	16th
First day 80 patients											
41 without amidopyrine treatment	3	10	13	8	4	2	0	0	1	0	0
39 with amidopyrine treatment	1	10	5	8	2	0	2	0	0	1	1
Second day 30 patients											
10 without amidopyrine	4	2	3	1	0	0	0	0	0	0	0
20 with amidopyrine	1	0	5	2	2	0	0	1	0	0	0
Third day 11 patients											
7 without amidopyrine	1	4	1	1	0	0	0	0	0	0	0
4 with amidopyrine	1	1	2	0	0	0	0	0	0	0	0
Fourth day 3 patients											
1 without amidopyrine	1	0	0	0	0	0	0	0	0	0	0
2 with amidopyrine	0	1	0	0	0	0	0	0	0	0	1
Sixth day 2 patients											
1 without amidopyrine	0	1	0	0	0	0	0	0	0	0	0
1 with amidopyrine	0	0	1	0	0	0	0	0	0	0	0

received amidopyrine, 1 grain (0.065 Gm.) for each year, up to 5 grains (0.3 Gm.) three times a day for ages above 5 years. The series includes ninety-five patients who received amidopyrine and ninety-nine to whom the drug was not administered.

On entrance the majority of patients bore the usual symptoms of measles: characteristic rash, coryza, conjunctivitis and bronchitis. One patient had broncho-pneumonia on admission. In all cases an attempt was made to determine the duration of the rash, but in sixty-nine this could not be learned. Eighty entered the hospital on the first day of the appearance of the rash: thirty within forty-eight hours, eleven within seventy-two hours, three within ninety-six hours, and two on the sixth day after the eruption. One patient entered without an eruption but developed the rash on the fourth day after admission (this patient received amidopyrine).

Of the eighty patients who entered on the first day of the eruption, thirty-nine received amidopyrine while forty-one did not. In the nonamidopyrine cases the temperature dropped to normal as follows: three on the first day, ten on the second, thirteen on the third, eight on the fourth, four on the fifth, two on the sixth, and one on the ninth day. The average duration of fever was 3.3 days.

<sup>3</sup> Gladstone, M. B. Brit. M. J. 1: 1198 (June 28) 1930. <sup>2</sup> 1103 (Dec. 27) 1930.

<sup>4</sup> Urquhart, G. H. and Winchester, A. H. Brit. M. J. 1: 1153 (June 21) 1930.

<sup>5</sup> Collier, J. I. Brit. M. J. 1: 1093 (June 14) 1930.

<sup>6</sup> Ronaldson, G. W. and Collier, J. I. Brit. M. J. 2: 994 (Dec. 13) 1930.

<sup>7</sup> Attlee, W. H. W. Brit. M. J. 2: 996 (Dec. 13) 1930.

In the amidopyrine treated cases the temperature dropped to normal as follows: one on the first day, nineteen on the second, five on the third, eight on the fourth, two on the fifth, two on the seventh, one on the fifteenth, and one on the sixteenth day. The average duration of fever was 3.6 days.

Of the patients who entered with a rash of two days' duration, ten had not been given amidopyrine and twenty had received it. In the former, the average duration of temperature was 2.1 days, in the latter, 3 days.

Of eleven patients who entered the hospital on the third day of rash, seven did not receive amidopyrine and showed an average duration of fever of 2.3 days, while four who did receive amidopyrine had fever for an average of 2.25 days.

Of the three patients who entered on the fourth day of rash, the one who did not receive amidopyrine was afebrile the following day. Two received amidopyrine, one became afebrile on the second day, the other developed a complication and a fever of sixteen days' persistence.

Of the two patients who supposedly had a rash for six days, the one who did not receive amidopyrine became afebrile on the second day, the one receiving amidopyrine became afebrile on the third day.

With the duration of the fever as a criterion, we found that the temperature dropped the first day after admission in 22 patients, 11 to whom amidopyrine had been administered and 11 to whom it had not been given. On the second day the temperature dropped in 63 patients, of whom 37 had received amidopyrine while 26 had not. Forty-two cases became afebrile on the third day, 18 with amidopyrine dosage, 24 without it. On the fourth day the temperature dropped in 29 patients, of whom 15 had and 14 had not been given amidopyrine. The temperature dropped in 15 cases on the fifth day, of which 5 were treated with amidopyrine, while 10 were not. Six cases became afebrile on the sixth day, 2 with amidopyrine and 4 without it. Of 10 cases that had an afebrile course, 8 were in the group that did not receive amidopyrine and 2 among those which did receive the drug. Of the cases with prolonged fever, 2 were in the nonamidopyrine group

TABLE 2—Day on Which Temperature Returned to Normal in One Hundred and Eighty Three Cases

Days on which temperature dropped to normal	1st	2d	3d	4th	5th	6th	8th	9th	10th	16th
Number of cases treated with amidopyrine	11	87	18	15	5	2	1	1	1	1
Number of cases without amidopyrine	11	26	24	14	10	4	0	1	1	0

—nine and fifteen days, respectively—while 4 were in the amidopyrine group—eight, nine, fifteen and sixteen days, respectively (table 2).

Twenty-seven patients in this series developed complications. Of these, 11 received no amidopyrine, while 16 were given the drug. Among the 11 in the nonamidopyrine group, there were 4 with bronchopneumonia (one having entered the hospital with this complication), 5 cases of unilateral otitis media (1 of these being in a patient with bronchopneumonia), 1 bilateral otitis media, and 1 abscess of the thigh.

Among the amidopyrine group, bronchopneumonia developed in 2 cases, unilateral otitis media in 9, a bilateral otitis media in 1 case, diphtheria and cervical adenitis in 2 cases each.

Since, as already stated, all cases entered the hospital when the rash had already appeared, the effectiveness or noneffectiveness of amidopyrine in the prevention of the rash could not be observed. Only one case entered in the Koplik spot stage before the appearance of the rash. This case in the amidopyrine group developed a full blown eruption on the fourth day after admission. No marked difference in the persistence of the rash was noted in the two groups, nor was there any striking difference in the symptoms of conjunctivitis or coryza, among the patients of the two groups.

#### COMMENT

In 194 unselected cases of measles in which amidopyrine was given in alternate cases (dosage as stated),

TABLE 3—Patients with Complications

Type	Broncho-pneu-monia	Uni-lateral Otitis	Cervi-cal Adenitis	Diph-theria	Bilateral Otitis	Abscess of Thigh	Total
With amidopyrine treatment	2	0	2	2	1	0	16
Without amidopyrine treatment	4	5	0	0	1	1	11

\* One patient had bronchopneumonia on entrance.

no striking difference was noted in the clinical course of the two groups. Nothing that would indicate therapeutic value was noted in the cases in which amidopyrine was given. The same clinical picture appeared in those in which this drug was not given and in those in which other antipyretics were given. There were no appreciable differences in the duration of fever or speed of convalescence among the two groups. Complications were about evenly distributed in the two groups.

In our investigation we have obtained results which make us believe that amidopyrine should be used as an adjuvant in the treatment of measles similar to any other antipyretic. This drug proved neither a 'specific' nor a harmful agent in the treatment of measles.

#### SUMMARY

1 Of 194 patients with measles admitted to the contagious division of the Cook County Hospital during the first six months of 1931, about one half received the amidopyrine treatment, while the remainder did not.

2 The morbidity, duration of fever, and complications were about equal in the two groups.

3 Amidopyrine did not prevent the appearance of the rash (one patient who entered the hospital and received amidopyrine developed a rash on the fourth day).

4 Complications occurred with equal frequency and severity in the two groups.

5 No marked drop of temperature was noted in the amidopyrine group as compared with the nonamidopyrine group, although a greater number of those in the amidopyrine group became afebrile on the second day.

6 Amidopyrine is not a specific for measles. It is a valuable antipyretic adjuvant in the treatment of the disease but should not be considered a specific.

#### CONCLUSIONS

1 Amidopyrine did not prevent the eruption of measles in the one case in this series seen in the pre-eruptive state.

2 It did not lessen complications.

3 It did not shorten the course of the disease.

310 South Michigan Avenue.

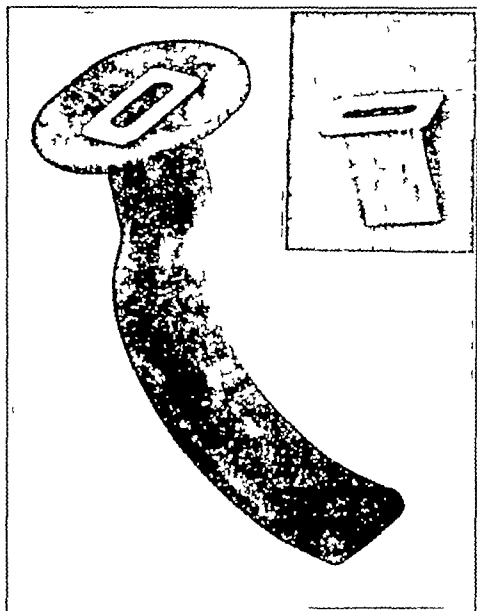
## Clinical Notes, Suggestions and New Instruments

### A NONTRAUMATIC PHARYNGEAL AIRWAY

ARTHUR E. GUFDEL, M.D. BEVERLY HILLS CALIF

The pharyngeal airway has become an indispensable part of the anesthetist's equipment. Heretofore, various forms have been made of metal but metal airways are all more or less traumatizing, even when carefully used frequently producing cut or bruised lips, chipped or broken teeth, or lacerations of the pharyngeal mucosa.

The airway herewith depicted is made of rubber and is sufficiently soft and flexible not to traumatize yet amply rigid



Pharyngeal airway made of rubber with metal insert for mouthpiece.

to maintain an open oropharyngeal air passage under all conditions. Its flexibility permits it to conform to the varied oropharyngeal curves in different individuals.

The metal insert extends into the airway for about 2 cm. from the oral opening and prevents collapse of the rubber between the teeth.

520 North Bedford Drive.

### TREATMENT OF A CASE OF ILLUMINATING GAS POISONING WITH METHYLENE BLUE SOLUTION

JOEL NASS, M.D. ALLENTOWN, PA.

F. H., a man, aged 24, was found by his mother, April 20, 1933, lying unconscious on the kitchen floor, in a room full of illuminating gas. He had been alone in the kitchen from 1:30 until 3:30 p.m. She dragged him to the back room and opened the door to admit fresh air. At that time, she says, he was unconscious and barely breathing.

When seen at 3:45 he was still unconscious, breathing at the rate of about 5 per minute, the respirations coming in short gulps. Time was not taken to determine the frequency of respiration, as immediate action was indicated. The neck and face were light pink, the lips were blue, and the pupils were dilated. The pulse was not perceptible at the wrists, and the heart action was poor, the rate probably about 90 per minute regular, but of poor muscular quality.

Artificial respiration was instituted immediately and was kept up during the administration of the methylene blue. Approximately 45 cc. of 1 per cent methylene blue solution was given slowly into the left antecubital vein. All the veins were dis-

tended, including those of the neck. It was evident that the circulation was impaired and sluggish, for it was necessary to aspirate firmly, to make sure that the needle was in the vein. About the time that the last 10 cc. was being injected, the patient's eyes opened and he uttered a few intelligible words. His respirations deepened, and with the completion of the injection the breathing was markedly improved and the pulse was obtainable at the wrist.

He was immediately removed to the Sacred Heart Hospital where he was given continuous inhalations of carbon dioxide and oxygen by means of a Gwathmey machine. The pulse at that time was weak, with a rate of 108. The blood pressure was 120 systolic, 95 diastolic, and the axillary temperature 95. Treatment consisted in elevation of the foot of the bed, hot water bags and blankets. Next was given an intravenous infusion of 10 per cent dextrose in physiologic solution of sodium chloride. Preceding the intravenous manipulation, several chills occurred, lasting about two minutes. Following the infusion, the patient was conscious but stuporous. Caffeine sodiobenzoate,  $7\frac{1}{2}$  grains (0.5 Gm.), was administered intramuscularly and continued every fourth hour. By this time the color was better, and the pulse full. The carbon dioxide-oxygen was discontinued, and normal respiratory movements ensued. By 7 p.m. he had reacted fully. The temperature was 99, pulse 100, respiration 20. He was extremely thirsty and suffered from nausea. At 11:30 p.m. he was fully aware of his surroundings and apparently out of danger.

After-care was symptomatic, and to date nothing in the way of complications has arisen. On being questioned, his first recollections were those in the hospital following the intravenous injection of dextrose and saline solution. He remembers nothing of the period of wakefulness following the injection of the methylene blue in the home.

1115 Hamilton Street.

### SPONTANEOUS RUPTURE OF A CAVERNOUS ANGIOMA OF THE SPLEEN

CHARLES EVERETT HAINES, M.D. AND P. T. McILROY, M.D.  
NEW ROCHELLE, N. Y.

Cavernous angioma of the spleen is rare. Ewing quotes Dowd as having collected only thirteen cases of angioma of the spleen through 1913.<sup>1</sup> Again, while rupture of the spleen is fairly common, spontaneous rupture of a cavernous angioma of the spleen is rare.

#### REPORT OF CASE

**History**—A woman, aged 43, white, married, had had irregular attacks of indigestion, and several attacks of arthritis possibly traceable to infections at the roots of the teeth.

About twenty-four hours before coming to the hospital, while standing in the preparation of dinner the patient was seized with extremely severe, sudden pain in the epigastrium. Her husband and her son and daughter were with her at the time of the seizure, they agreed with her that there had been no trauma.

The patient was immediately put to bed but a physician was not called at the time. Within an hour she became nauseated, she vomited and continued to vomit several times an hour for twenty-four hours. The pain was severe, continuous and burning during this period. It was mainly in the epigastrium, although there was moderate pain in the right lower quadrant.

**Physical Examination**—The patient appeared prematurely senile and poorly nourished and was acutely ill. Vomiting was frequent. She could be aroused but was semicomatose. She gasped for air as though she had lost a large quantity of blood.

The temperature was 101.4 F. by rectum, the pulse was 115 per minute, respirations were 25 per minute. The skin and tongue were dehydrated. The heart sounds were weak and rapid but regular. The blood pressure was 120 systolic, 75 diastolic.

The abdomen was very slightly distended and soft. There seemed to be fluid within the abdominal cavity. The entire abdomen was tender, exquisitely tender in the epigastrium and

<sup>1</sup> Ewing, James. Neoplastic Diseases. Philadelphia: W. B. Saunders Company, 1928.

moderately tender in both upper quadrants. There was also tenderness in the left costovertebral angle. The vagina and rectum were normal. The diagnosis was acute perforation of a gastric ulcer. Immediate operation was advised.

**Operation**—Before operation the patient was given 1000 cc of physiologic solution of sodium chloride and 1000 cc. of 5 per cent dextrose by hypodermoclysis. The abdomen was opened through an upper right rectus incision, the incision was later extended to the left lower costal margin.

When the peritoneum was opened, bright red blood welled into the wound. The spleen was palpated and found surrounded by fresh adhesions. The adhesions were broken up. The pedicle was tied and the spleen was removed. The free blood was left in the peritoneal cavity, which was closed without drainage. A transfusion of 500 cc. of blood was given before the patient was taken from the operating room.

**Postoperative Course**—After the patient was returned to bed she was given 1000 cc of physiologic solution of sodium chloride and 1,000 cc. of 5 per cent dextrose by hypodermoclysis. A similar hypodermoclysis was given six hours later and again twelve hours later. Twenty-two hours after operation she was given 200 cc. of dextrose intravenously. Three hours after this another transfusion of 500 cc. of whole blood was given. The following day another hypodermoclysis was given.

The heart became weaker and weaker in spite of the administration of caffeine sodiobenzoate. Vomiting could not be controlled by a duodenal tube, and pain and restlessness could not be controlled by large doses of morphine.

Death occurred forty-eight hours after operation.

**Pathologic Report**—The specimen consisted of a spleen measuring 10 cm in length, up to 5 cm in width and up to 4 cm in thickness. The capsule presented a wrinkled appearance. The spleen was firm in consistency and cut with considerable resistance. The pulp was grayish red. At one point near the upper pole was a collection of cystlike spaces containing blood. The largest of these communicated with the diaphragmatic surface. The spaces varied from the size of a pinhead to that of a pea.

Microscopic examination of the tissue taken from the area at which the hemorrhage occurred showed the presence of circumscribed spaces surrounded by fibrocellular connective tissue. The spaces were lined by flattened endothelium, they contained blood.

The pathologic diagnosis was cavernous angioma of the spleen.

421 Huguenot Street

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.  
H. A. CARTER, Secretary

### ACCEPTANCE OF SUNLAMPS

During the past seven years the Council on Physical Therapy has devoted much time and effort to the question of ultraviolet radiation therapy, and in a preliminary statement<sup>1</sup> last July gave its findings and its specifications for acceptance of "sunlamps," by which term is understood a lamp that, at a specified distance, emits ultraviolet radiation not differing essentially from that of the clearest weather, midday, midsummer, mid-latitude, sea level, natural sunlight, in total intensity and in spectral range of wavelengths extending from about 2900 to and including, 3,130 angstroms, and that does not emit an appreciable amount of ultraviolet radiation of wavelengths shorter than 2800 angstroms.

Sunlamps, so called, are not to be confused with therapeutic ultraviolet generators designed for service in hospitals, clinics and offices of physicians. Since sunlamps are for unsupervised home use they are often of low intensity, to avoid injury from overdosage.

After extensive investigation and inquiry in collaboration with physicists and other scientists acting as consultants and after due consideration of the status of ultraviolet radiation therapy, the Council on Physical Therapy has adopted and, until a more practicable and reliable procedure is proposed, will use the erythematous reaction as a basis for judging the effectiveness of a sunlamp, for the following reasons:

(a) The erythemal response is in common use as an indicator of skin tolerance and of the amount of ultraviolet radiation than can be applied at one time and so long as the present day types of ultraviolet generators are used, the erythemal test will be necessary to prevent injury from burns.

(b) It is practically the only physiologic reaction to ultraviolet rays that is established with a relatively high degree of accuracy, permitting a calculation of the approximate time of exposure from a simple physical measurement of the ultraviolet radiant flux emitted by the lamp.

(c) It is a simple and practicable means of preventing severe burns when using powerful sources of ultraviolet radiation.

(d) It is an efficient safeguard against the fraudulent sale of lamps that emit little or no radiation of wavelengths shorter than about 3,130 angstroms, generally accepted as having a specific therapeutic value in preventing rickets.

In an adopted article entitled "Ultraviolet Radiation Useful for Therapeutic Purposes—Specification of Minimum Intensity or Radiant Flux," by Dr. W. W. Coblenz, the Council has definitely specified the types of ultraviolet radiation generators that possess sufficient ultraviolet energy to be of therapeutic value. Furthermore, the Council has drafted two lists of requirements to govern advertising of ultraviolet generators to the public and to the profession.<sup>2</sup>

The Council's specifications of minimum intensity are based on a comfortable and convenient operating distance (namely, 24 inches, or 61 cm) from the front edge of the reflector at which distance the exposure can be made without burning the skin. The ultraviolet intensity of the lamp shall be such that the time of exposure to obtain a minimum perceptible erythema (if such a dose is desired) is 60 minutes, or a total of 120 minutes for a complete exposure front and back. In this connection it is relevant to note that the Council does not prescribe the dosage of ultraviolet radiation. Its function is to advise and protect the medical profession and the public against misleading and deceptive advertising in connection with the manufacture and sale of devices for use in physical therapy.

In view of the increasing number of so-called sunlamps, some emitting so little ultraviolet that from ten to twenty hours would be required to obtain an erythemal dose, the purchaser of a sunlamp has a right to expect, and the Council on Physical Therapy requires the ultraviolet output to be sufficiently strong relative to the total heat emanating from the lamp, that, if an erythemal dose is desired in fifteen minutes, the operating distance can be shortened without burning the bare skin by the heat ("heat burn") of the lamp in its reflector.

Physiologic experiments show that for practical purposes the wavelength of maximum erythemogenic action may be taken at the emission line of homogeneous radiation of mercury vapor, at 2,967 angstroms, present in many sources of ultraviolet radiation. The erythemogenic efficiency of this emission line is practically 100 per cent. No other wavelength or group of wavelengths, in any source, has such a high efficiency in generating an erythema.

For example the erythemogenic efficiency (these values are subject to slight revision when better known) of the ultraviolet of wavelengths shorter than and including 3,130 angstroms, in sea level, midlatitude, noonday June sunlight, is about 0.22 (22 per cent), the Mazda type S-1 lamp 0.24, the Mazda type S-2 lamp, 0.215 the low temperature, type G, mercury vapor glow lamp, 0.185 the so-called cold quartz, low temperature, low vapor pressure, mercury arc, 0.55, the high temperature, high vapor pressure, quartz mercury arc, 0.344, the blue flame carbon arc lamp, 0.42 and the Mazda CX tungsten filament lamp, from 0.16 to 0.20, depending on the temperature of the filament.

The intensity and the erythemogenic action of the emission line of mercury at 2,967 angstroms is easily evaluated in absolute units, and the erythemal action, as well as the radio-

<sup>1</sup> Acceptance of Sunlamps. A Preliminary Statement. J. A. M. A. 99:31 (July 2) 1932.

<sup>2</sup> Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession Only and Regulations to Govern Advertising of Ultraviolet Generators to the Public Only.

metric output of heterogeneous ultraviolet radiation from various sources is easily correlated with this emission line as a standard.

The Council has therefore adopted 20 microwatts per square centimeter of homogeneous radiation of wavelength 2,967 as the erythral unit (E U) of dosage, that is, 1 E. U. = 20 microwatts per square centimeter of wavelength 2,967 angstroms. The amount of ultraviolet radiation of wavelengths shorter than and including 3,130 angstroms that a source must emit equivalent to 20 microwatts per square centimeter of homogeneous radiation of wavelength 2,967 angstroms, is obtained by dividing the 20 microwatts by the erythemogenic efficiency of the source in question. For example the erythemogenic equivalent of standard sunlight is  $(20 \div 0.22 =) 91$  microwatts per square centimeter, and for the type G mercury vapor glow lamp it is  $(20 \div 0.185 =) 108$  microwatts per square centimeter.

From the foregoing specifications it follows that in order to produce a minimum perceptible erythema on the average skin in 15 minutes for therapeutic lamps and in 60 minutes for so-called sun lamps the erythemogenic equivalent of the heterogeneous ultraviolet radiant flux of wavelengths shorter than and including 3,130 angstroms emitted by the various above mentioned sources must be as follows (Erythral Unit E U)

- 1 E. U. = 20 microwatts per sq. cm. of homogeneous radiation of wavelength 2,967 angstroms exposure 15 minutes
- = 5 microwatts per sq. cm. of homogeneous radiation of wavelength 2,967 angstroms exposure 60 minutes
- = 91 microwatts per sq. cm. of midday midsummer midlatitude sea level ultraviolet solar radiation exposure 15 minutes
- = 23 microwatts per sq. cm. of midday midsummer midlatitude sea level ultraviolet solar radiation exposure 60 minutes
- = 83 microwatts per sq. cm. of Mazda type S 1 lamp radiation exposure 15 minutes.
- = 21 microwatts per sq. cm. of Mazda type S 1 lamp radiation exposure 60 minutes.
- = 93 microwatts per sq. cm. of Mazda type S 2 lamp radiation exposure 15 minutes.
- = 23 microwatts per sq. cm. of Mazda type S 2 lamp radiation exposure 60 minutes.
- = 108 microwatts per sq. cm. of low temperature, type G mercury vapor glow lamp radiation exposure 15 minutes
- = 27 microwatts per sq. cm. of low temperature type G mercury vapor glow lamp radiation exposure 60 minutes
- = 58 microwatts per sq. cm. of high temperature high vapor pressure, quartz mercury arc radiation exposure 15 minutes.
- = 145 microwatts per sq. cm. of high temperature high vapor pressure quartz mercury arc radiation exposure 60 minutes
- = 36 microwatts per sq. cm. of cold quartz low temperature, low vapor pressure quartz mercury arc radiation exposure 15 minutes.
- = 9 microwatts per sq. cm. of 'cold quartz low temperature, low vapor pressure quartz mercury arc radiation exposure 60 minutes
- = 48 microwatts per sq. cm. of blue flame carbon arc lamp radiation (in reflector no filter window) exposure 15 minutes.
- = 12 microwatts per sq. cm. of blue flame carbon arc lamp radiation (in reflector no filter window) exposure 60 minutes

The foregoing correlation of erythemogenic equivalents of various lamps is to be used in the following manner. Suppose, for example, that a type G mercury vapor glow lamp is submitted to the Council for acceptance and that the radiometric measurements at 24 inches (61 cm.) indicate an ultraviolet radiant flux of 9 microwatts per square centimeter. Since this is only  $(9 \div 27 =)$  one third of the minimum requirement for this type of sunlamp, it will be necessary to prolong the exposure for  $(3 \times 60 =)$  180 minutes (3 hours) if it is desired to obtain an erythral dose with the lamp at 24 inches. Obviously such a lamp does not comply with the Council's specifications.

In the low temperature glow lamps which have a low infra-red output, it may not be found objectionable to shorten the operating distance in order to shorten the time of exposure. On the other hand in the case of the tungsten filament lamp, the large amount of heat from the filament and from the glass bulb may become intolerable when the lamp is operated close to the body.

From time to time, acceptances or rejections of sunlamps for home use will be published in the columns of the Council on Physical Therapy in THE JOURNAL. In accepting sunlamps, the attention of the profession is called to the following:

A The Council on Physical Therapy definitely withholds acceptance of the postulatory principle of dual-purpose lighting, because it is highly theoretical and the promulgators of this

idea have not presented acceptable clinical evidence to the Council substantiating its therapeutic or prophylactic value.

B The Council on Physical Therapy declines to accept sun lamps if the manufacturer fails to state in all advertising matter and descriptive literature the distance between the lamp and the recipient required to equal the intensity of midday mid summer, midlatitude, sea level, natural sunlight. Thus in the acceptances that follow, the reader will note that the manufacturer has stated the distance the recipient should be from the sunlamp to receive the alleged benefits.

C. The manufacturers of acceptable sunlamps for home use have agreed to discontinue objectionable claims such as that exposure to ultraviolet rays increases or improves the tone of the tissues or of the body as a whole, stimulates metabolism, acts as a tonic, increases mental activity, maintains health, or tends to prevent colds, because these claims have not been conclusively substantiated by experimental evidence.

D The Council declines to sanction claims recorded in descriptive literature and advertising matter in which implication is made that the production of an erythema is unnecessary as a test of intensity, that suberythral doses are sufficient for therapeutic benefit. The Council believes that, while such statements may be made in good faith, they merely open the way to fraud by irresponsible vendors of alleged sources of ultraviolet radiation. Until further evidence is presented to prove otherwise, the Council declares that the erythema test is the only means of determining whether appreciable ultraviolet is emitted by the source.

In order that there can be no misunderstanding on the part of any one relative to the stand of the Council on Physical Therapy on the acceptance of sunlamps, the dual-purpose lighting and the suberythral dosage, the aforementioned stipulations are given to the profession that it may better understand the problems confronting the Council regarding ultraviolet radiation therapy. The Council will give careful consideration to clinical evidence scientifically gathered by controlled experiments.

#### COLLINS OXYGEN TENT ACCEPTABLE

The Collins Oxygen Tent, manufactured by Warren E. Collins, Inc., Boston, was submitted to the Council for consideration. The Council finds that it is a serviceable tent and will provide oxygen therapy for treatment of those cases which are amenable to oxygen therapy, such as the treatment of pneumonia and certain cardiac cases.

The tent canopy is provided with large nonflammable windows on all sides and extends the full width of the hospital bed. The motor blower is comparatively noiseless in operation and apparently capable of displacing 50 cubic feet of air per minute. It is mounted on the side of the ice compartment or cabinet. In this position the motor is accessible, and in case of necessity a new motor can be installed in a few moments. The firm claims that a spare motor accompanies each machine ready for instant use.

The cabinet of the Collins Oxygen Tent is made of steel finished in ivory enamel with chromium trimmings. It is insulated with a two-inch thickness of cork and is lined with heavy copper. A construction of the ice compartment is such that the air travels twice the height of the cabinet, coming in contact with more than two cubic feet of cracked ice. The ice capacity is 125 pounds and under ordinary conditions will last about twenty-four hours. The ice cabinet is mounted on rubber tired casters and serves as a support for the tent. A rheostat controls the speed of the motor blower and governs the temperature and humidity within reasonable limits. The firm claims it is possible to reduce the temperature in the tent 20 degrees below room temperature and maintain the humidity within normal limits. Provision is made for the use of soda lime. Part of the regular equipment is a simple oxygen analyzer furnished without extra cost.

The unit was investigated in a clinic acceptable to the Council. The investigation substantiated the physical and therapeutic claims made by the manufacturer and met the tentative specifications of minimum standards for oxygen tents (unpublished) adopted by the Council. The Council on Physical Therapy declares the Collins Oxygen Tent acceptable for inclusion in the list of accepted devices.

## Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING  
REPORTS  
RAYMOND HERTWIG Secretary

### NOT ACCEPTABLE

#### MRS KLEIN'S HOME MADE REAL EGG NOODLES

The F L Klein Noodle Company, Chicago, submitted to the Committee on Foods an egg noodle prepared from durum patent flour, whole eggs or egg yolk and salt, called 'Mrs Klein's Home Made Real Egg Noodles'

*Discussion of Label*—The name 'Mrs Klein's Home Made Real Egg Noodles,' in conjunction with the facsimile of a woman preparing noodles in the home kitchen and a bowl of eggs labeled 'fresh eggs' resting on a table, implies that these noodles are "home made" and that fresh shell eggs only are used. The noodles are prepared in a factory. The statement 'fresh egg noodles' also connotes that fresh eggs only and not 'storage eggs,' 'dried eggs' or "frozen eggs" are used which is not in accord with fact. It is further stated that 'In making my noodles I used twenty good fresh eggs to five pounds of fine wheat flour, and I mixed them by hand. Today Mrs Klein's Real Egg Noodles are mixed in electric mixers but I still use the same formula as when I made them by hand' which is not in keeping with submitted manufacturing formula. A considerably smaller proportion of eggs is used. It is alleged that the noodles are "recommended by physicians. They contain all the necessary vitamins." The claim 'recommended by physicians' is vague and meaningless. Should it be true that any number of physicians recommend this brand of noodles, then the statement should specifically state what the physicians recommend the noodles for. The noodles do not contain all the necessary vitamins. The name and claims are incorrect and misleading.

The company was advised of the Committee's report but has not demonstrated that it has acted on the recommendations. This egg noodle product will therefore not be listed among the Committee's accepted foods.

### NOT ACCEPTABLE

#### VITABAR

The Vitamin Company of America, Incorporated, Orlando, Fla, submitted to the Committee on Foods a dextrose sweetened milk chocolate coated confection of mixed fruits with wheat embryo and added vitamin extracts called "Vitabar and containing vitamins A, B (complex), C, D and E in substantial amounts. Later it was learned from a company member and a distributor that the product had been withdrawn from the market. A leaflet containing a new type of claims not passed on at the time of acceptance, however, is now being distributed by Eros and Company of Cleveland. The advertising prominently states 'Endorsed by the highest medical authorities the American Medical Association. Vitabar was accepted by the Committee on Foods of the American Medical Association and not 'Endorsed by the American Medical Association.' It is stated "Vitamins are Health. Vitabar is nature's complete assurance of HEALTH. Vitamins mean LIFE—and Vitabar means VITAMINS." Vitamins are necessary for health, they neither assure nor give health which depends on many other factors than vitamins and nutrition. Vitabar is not 'Nature's complete assurance of Health.' Vitamins are essential nutrients of the diet as are protein, carbohydrate, fat and so on. Vitamins do not "mean life" nor do they possess any mysterious life properties as implied. It is stated, 'Lack of vitamin C often causes rheumatism.' Lack of vitamin C is a cause of scurvy, a deficiency disease, but not of rheumatism.

The claims are incorrect and deceptive and conflict with the Committee's principles and policies for sound advertising in the interest of public welfare and health. At the time of acceptance the company assumed the responsibility of controlling the advertising and keeping it within the scope of the Committee's requirements. This obligation the company has

disregarded, resorting instead to a "patent medicine" type of advertising. The previous acceptance is being withdrawn and the product will therefore no longer be listed among the Committee's accepted foods.

### NOT ACCEPTABLE

#### LARABEE'S HIGH TOP FAMILY PATENT FLOUR (BLEACHED)

The Larabee Flour Mills Company of the Commander Larabee Corporation submitted to the Committee on Foods a flour composed of a mixture of 'standard patent' and 'first clear' flours milled from hard winter wheat called Larabee's High Top Family Patent Flour (Bleached).

*Discussion of Name*—The designation 'High Top Family Patent Flour' is appropriate only for flour constructed of selected flour mill streams for making a blend superior in baking quality to 'straight flour and especially to a mixture of 'standard patent' and 'first clear' flours. Patent flours from the baking standpoint are considered higher grade flours than 'straight' flour or blends of 'standard patent' and 'first clear' flours and usually demand a higher price. The present designation is incompatible with the nature of the flour, misinformative and misleading.

The corporation when informed of this opinion has not demonstrated willingness to change the designation accompanying the trade name in accordance with the Committee's recommendation. The flour will therefore not be listed among the Committee's accepted foods.

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

### OPTIMISTIC MILK BREAD (WHITE)

*Manufacturer*—Davis Standard Bread Company, Mignonette Street Los Angeles

*Description*—A white milk bread made by the straight dough method (method described in THE JOURNAL March 12 1932, p 889) prepared from white flour fresh whole milk, sucrose, salt, yeast, malt extract shortening and a yeast food containing calcium sulphate ammonium chloride sodium chloride and potassium bromate.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	35.5
Ash	2.0
Fat	3.5
Protein (N x 6.25)	13.5
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	45.1

*Calories*—27 per gram 77 per ounce

*Claims of Manufacturer*—Made with fresh milk conforms to the United States Department of Agriculture definition and standard for milk bread.

### MARECHAL NEIL SELF RISING FLOUR (BLEACHED)

*Manufacturer*—Collin County Mill & Elevator Company, McKinney, Texas

*Description*—A self rising flour containing blended "hard and soft bleached patent flours, salt, calcium acid phosphate and baking soda.

*Manufacture*—The ingredients are mixed in definite proportions in a batch mixer and automatically packed in cotton bags. The flour is bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and with nitrogen trichloride (one-ninth ounce per 196 pounds).

*Claims of Manufacturer*—A self rising flour for home baking of cakes and biscuits.

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 10 1933

## TYPHOID CARRIERS AND THEIR TREATMENT

Carriers of typhoid bacilli are a menace because they are often the cause of epidemics of typhoid. Since these carriers are most difficult to cure, their recognition and treatment constitute a serious public health problem. Various estimates are given of the proportion of convalescents who become chronic carriers. Gill<sup>1</sup> reported that 10 per cent of typhoid convalescents in the Southern states become chronic carriers. In general, it is estimated that from 2 to 5 per cent of all typhoid patients become permanent carriers. Recently C. H. Browning<sup>2</sup> has published a thorough report for the Medical Research Council in England. Carriers are classed as temporary (a short period during convalescence) and chronic (those not cured spontaneously after one year) and further as chronic biliary, intestinal and urinary carriers. Statistics indicate that there are four or five female chronic carriers to one male. The spread of infection is commonly due to contamination of food, particularly milk, though the infection may be water borne, fly borne or transmitted through soiled linen or direct contact. A carrier may transmit the infection only at intervals, which may be separated by years of noninfective periods. The identification of the carrier depends on the isolation of typhoid bacilli from feces, duodenal contents, urine or other discharge. This is often difficult and may require repeated examinations. Browning relied on direct plating in MacConkey's bile medium, though accessory methods are described, as the Widal reaction and the complement fixation, opsonic index, and skin sensitivity tests. Prophylactic vaccination minimizes the incidence of carriers by lessening the number of severe attacks of typhoid. Browning states that compulsory powers ought to be exercised by public health officials to obtain for examination blood, feces and urine of all convalescents and

suspected carriers. When recognized, carriers must be instructed as to the disposal of excreta as well as to the importance of personal cleanliness. They should be forbidden to handle food or drink intended for others, and their movements and whereabouts must be reported to the public health officers.

The treatment of a typhoid carrier may be non-surgical or surgical and has for its object the prevention of the excretion of living typhoid bacilli in the feces or urine. Chemotherapy in the form of acriflavine, phenol derivatives for intestinal antiseptics, salicylates and alkalis have proved ineffective. Alteration in the intestinal flora induced by acidophilus milk has no effect on the carrier state. Bacteriophage, vaccine treatment and roentgen irradiation over the gallbladder also have no effect. Browning concludes that there is no satisfactory vaccine or drug treatment of the condition, although biliary drainage by the duodenal tube deserves to be tested further. However, in cases in which the gallbladder is the site of infection, surgical measures have been highly satisfactory. The procedures in general use are cholecystectomy with or without prolonged drainage of the hepatic duct, cholecystostomy, cholecystogastrostomy and sometimes appendectomy. Cholecystectomy has been the most frequent operation and appears to have cured 75 per cent of the cases so far recorded as treated by this method. During the investigation three chronic intestinal carriers were operated on, and as the result of thorough observation afterward, it is concluded that all were cured. A small proportion of fecal carriers are of the intestinal type and consequently do not respond to gallbladder surgery.

The number of urinary carriers is small as compared with fecal excretors. The site of infection and the state of the genito-urinary system should be ascertained. Urinary antiseptics, especially methenamine, have been used successfully. However, the presence of gross lesions in the urinary tract may cause the failure of antiseptic treatment. In some reported cases the infection was unilateral, and in such cases operative treatment (nephrotomy, nephrectomy) has resulted in cure.

This subject deserves continued interest, since the persistence of chronic carriers of typhoid bacilli means the sporadic and epidemic occurrence of typhoid.

## THE FATE OF TARTARIC ACID IN MAN

Modern biochemistry has reversed the older conception as to the behavior of many organic acids in the body. Unlike the mineral acids, such as hydrochloric or sulphuric acid, not all the organic acids function as acids in intermediary metabolism. Some of them are "potential alkalis" in their mode of action, they may protect the body from loss of base. In earlier days the behavior of benzoic acid in the organism served as a sort of "model" for the action of the organic acids as a group. Benzoic acid,  $C_6H_5COOH$ , though entirely "organic" in its make-up, is not burned up in the body.

<sup>1</sup> Gill D. G. Epidemiology of Rural Typhoid. J. A. M. A. 89: 1198 (Oct. 8) 1927.

<sup>2</sup> Browning C. H. with Coulthard H. L., Cruickshank R., Guthrie K. J. and Smith R. P. Chronic Enteric Carriers and Their Treatment. Medical Research Council Special Report Series No. 179. London: His Majesty's Stationery Office, 1933.

It tends to conjugate with glycine and is excreted as hippuric acid. When benzoic acid is consumed in undue amounts, some of it may even be excreted as such by the kidneys. Oxalic acid,  $\text{HOOC COOH}$ , is another organic acid that seems to resist the oxidative capacities of the organism. Oxalates are well known constituents of the urine.

Several other organic acids are widely prevalent, often in considerable amounts, in our common foods. Thus citric, malic and tartaric acids occur in citrus fruits, apples and grapes, respectively. Citric acid is readily oxidized in the body. The drinking of large amounts of orange juice, which naturally contains it, actually results in the production of alkaline urines, as Blatherwick demonstrated long ago. In one of his publications he remarked that it is impossible under ordinary conditions to overreach the organism's ability to oxidize citric acid. This applied to an amount contained in a daily intake of orange juice in which an equivalent of 48 Gm. was present.

The behavior of tartaric acids has been the subject of much debate. Underhill and Wells demonstrated years ago that large doses of tartrates may cause damage to the kidney tubules and serious disturbance in renal function. Nevertheless there was a widespread impression that tartrates can be oxidized to some extent in the body, though less readily than either citric, malic or succinic acids. Subsequently, however, Underhill, Leonard, Gross and Jaleski,<sup>1</sup> working in the Yale University School of Medicine, recorded results in animals which are at variance with earlier reports. In both rabbits and dogs, when nontoxic doses of tartrate were administered either orally or intramuscularly, they were able to recover from 74 to 99 per cent in the urine. When the dose of tartrate administered is sufficient to cause severe renal damage, the tartrate excretion is greatly diminished. In the rat, the average urinary output is 68 per cent and 79 per cent, respectively, for oral administration and subcutaneous injection. The guinea-pig, it was found, is unique in that it excretes in the urine up to 27 per cent of tartrates administered by mouth, and practically 100 per cent of tartrates given subcutaneously.

The situation with respect to man has remained somewhat inconclusive.<sup>2</sup> Studies by Finkle<sup>3</sup> at the Mount Sinai Hospital in New York, however, support the conclusion that tartaric acid cannot be oxidized or otherwise utilized by human beings. When injected intramuscularly, tartaric acid reappears almost quantitatively in the urine within ten hours, the major portion being excreted within the first four hours. When taken by mouth, only about 20 per cent of ingested tartrate is eliminated in the urine. At no time in the course of

investigations have any traces of tartrate taken by mouth been demonstrated in the feces. It has long been known that tartaric acid is destroyed by fungi and by certain bacteria. According to Finkle it is therefore probable that the portion of tartaric acid given by mouth which fails to appear in the urine (80 per cent) is destroyed in the intestinal tract by bacterial action. Twenty per cent or less is absorbed before it is subjected to the destructive action of the intestinal bacteria and is excreted in the urine. The experiments of Pickens and Hetler<sup>4</sup> are in accord with these results. They gave large quantities of grape juice to their subjects and found that the urine was acid and not alkaline as might be expected from feeding of malic or citric acid. The excretion in the urine of a part of the tartaric acid present in the grape juice may account for their results. Tartrates also form a part of some of the commonly used baking powders as well as being present in the laxative rochelle salt and seidlitz powder. In Finkle's studies on man, comparatively small doses were administered. Under such conditions, renal damage did not occur. He points out that it is therefore possible to recover practically all of the injected tartrate in the urine and to demonstrate that none of this fruit acid is utilized by human beings.

#### CARBOHYDRATES IN THE URINE

That small amounts of carbohydrate substances may be found in the urine of healthy persons has been frequently established. Part of the carbohydrate has been alleged to be a fermentable compound, while another portion is reported to be nonfermentable by yeast. The knowledge of these facts inevitably has a bearing on the consideration of diabetes, in fact, the problems of this disorder must have some intimate relation to the "normal" sugar excretion, if the latter conception is a justifiable one. The ability to demonstrate a carbohydrate substance in the urine of health depends on the delicacy of the test reactions employed.

In 1918, S. R. Benedict and his co-workers<sup>5</sup> reached the conclusion, on the basis of careful investigations, that sugar elimination takes place, in small amounts of course, continuously through the urine. At that time they alleged that progress in the study of carbohydrate metabolism will probably be more rapid if the term "glycosuria" can be abolished. This word, they insist, was not created by the mind of man but by the inefficiency of the copper tests. Glycosuria implies a sudden point at which sugar appears in the urine. Since there is no such point, the term glycosuria is without special significance and is misleading. A term is needed, Benedict argues, to include both the constant presence of sugar in normal urine and an excess of

<sup>1</sup> Underhill F. P., Leonard C. S., Gross E. G. and Jaleski T. C. *J. Pharmacol. & Exper. Therap.* **43**: 359 (Oct.) 1931.

<sup>2</sup> Underhill F. P., Peterman F. I., Jaleski T. C. and Leonard C. S. *J. Pharmacol. & Exper. Therap.* **43**: 381 (Oct.) 1931.

<sup>3</sup> Finkle Philip. The Fate of Tartaric Acid in the Human Body. *J. Biol. Chem.* **100**: 349 (March) 1933.

<sup>4</sup> Pickens L. M. and Hetler R. A. *J. Home Economics* **22**: 44 1930.

<sup>5</sup> Benedict S. R., Osterberg Emil and Neuwirth Isaac. Studies in Carbohydrate Metabolism. II. A Study of the Urinary Sugar Excretion in Two Normal Men. *J. Biol. Chem.* **34**: 217 (April) 1918.

sugar elimination above the normal. Such a term would serve as a reminder to the student that the normal urine contains sugar that this sugar is subject to change through various influences, and that it is worthy of some attention. Possibly "glycuresis" would be a satisfactory term, as indicating increase of sugar, not a new appearance of sugar in the urine.

West and Steiner<sup>2</sup> of the Washington University School of Medicine in St. Louis have presented evidence that human urine, both normal and during starvation, contains fermentable sugar in the strict sense of the term and that this sugar is dextrose. In further studies in the same laboratories West, Lange and Peterson<sup>3</sup> reached the conclusion that the excretion of fermentable sugar in normal urine seems to be related to the condition of activity of the pancreas and of the general carbohydrate metabolism. Conditions that lower the carbohydrate tolerance increase the fermentable sugar excreted and vice versa. This suggests that the small quantity of fermentable sugar of normal urine is dextrose and that Benedict's idea of a continual passage of blood sugar into the urine is correct. It should be emphasized, to avert all misconceptions, that the quantity of sugar passing is so small that it is not detectable by the ordinary qualitative tests and that it is of no clinical importance.

Several investigators seem to agree that the physiologic factors affecting the excretion of fermentable sugar in normal urine are quite unrelated to those controlling the excretion of the nonfermentable fraction, to which some reference has already been made. According to West, Lange and Peterson a diet entirely free from substances that will contribute to the nonfermentable fraction cannot be realized. Accordingly, a preliminary study was made to discover the foods which, taken in reasonable quantities, have no marked effect on the excretion of nonfermentable substances. It was found, in brief, that white bread, milk, potatoes, sucrose, starch, fats, peas, string beans, tomatoes, citrus fruits, canned pineapple and pears, strawberries, bananas, lettuce, cabbage, celery, eggs, cheese, farina, meats cooked without cereal, and some other articles of food can be taken rather interchangeably in mixed diets with a practically constant elimination of nonfermentable reducing substances. Ingestion of pure carbohydrates does not augment the nonfermentable urinary carbohydrate fraction. These results are in accord with the ideas of Folin and Berglund and others that much of the reducing material of normal urine represents unassimilable foreign and altered carbohydrate substances from the diet. Indeed, the St. Louis biochemists regard it as likely that practically all foods contribute something to this nonfermentable fraction,

which is apparently made up of a heterogeneous group of substances essentially non-nitrogenous, and probably chiefly carbohydrate in nature.

## Current Comment

### BOTULISM "CARRIERS"

Migrating birds, without signs of botulinus infection, may harbor viable spores of *Clostridium botulinum* in their livers, according to recent reports by Gunderson<sup>1</sup> of the University of Minnesota. These birds may serve as mechanical disseminators of this micro-organism to new soil areas. They constitute, therefore, a potential danger in carelessly prepared human food. While the data submitted are drawn mainly from migrating ducks, a carrier condition was occasionally demonstrated in apparently normal grouse. The condition could be produced experimentally in pigeons. In order to produce this condition, a botulinus culture was detoxified by heat (80 C for thirty minutes) and 1 cc of the nontoxic spore suspension was fed to pigeons. Forty-eight hours later viable micro-organisms were recovered from an occasional apparently normal liver. Whether or not the presence of minute traces of toxin in the ingested food would increase this percentage has not yet been determined.

### POLYVALENT BACTERIOPHAGE

"Bacteriophage" as found in nature usually exhibits lytic action against only one narrow bacterial type. If apparently polyvalent bacteriophages are found, this polyvalence is usually due to the presence of several independent monovalent units, which can be separated by appropriate fractionation methods. Occasionally, however, an apparently true polyvalent bacteriophage is found that resists all attempts at such fractionation. Working with a trivalent bacteriophage of this character that satisfies all criteria of unity, Bronfenbrenner<sup>1</sup> of Washington University School of Medicine found that the bacteriophage would propagate equally well if grown in symbiosis with any one of the three susceptible bacterial types or species. Nevertheless this bacteriophage could be fractionally inactivated. If carefully heated in the presence of glycerin or saccharose, all but one of its specific monovalences were denatured or destroyed. Thus fractionally denatured, the bacteriophage is truly monovalent. It will grow and cause lysis only in symbiosis with one narrow bacterial type. The heterophile valencies thus denatured or destroyed, however, are quantitatively restored or regenerated on serial symbiosis with this one type. Bronfenbrenner believes he is dealing with a genus-specific rather than a narrow type-specific phagic colloid, conceivably directed against the heterophile fractional chemical component common to the three susceptible bacterial types. He quotes his data as evidence against the assumed parasitic nature of bacteriophage. If the bacteriophage were a parasite

<sup>2</sup> West, E. S. and Steiner, A. The Sugars of Urine. III. The Chemical Nature of the Fermentable Sugar of Normal and Starvation Urine. *Biochem J* 26: 1742, 1932.

<sup>3</sup> West, E. S., Lange, A. C. and Peterson, V. L. The Sugars of Urine. II. Factors Affecting the Excretion of Fermentable and Non-Fermentable Sugars in Urine. *Biochem J* 26: 1728, 1932.

<sup>1</sup> Gunderson, M. F. *Proc. Soc. Exper. Biol. & Med.* 30: 747 (March) 1933.

<sup>1</sup> Bronfenbrenner, Jacques. *Proc. Soc. Exper. Biol. & Med.* 30: 729 (March) 1933.

capable of invading several bacterial types it is difficult for him to believe that heat could destroy its power of invading all but one type, while leaving the invasive power of this type largely unimpaired. Furthermore, to his mind, the subsequent recovery of the original polyvalent lytic power cannot be explained on the basis of "adaptivity" of the parasite to a new host. The regeneration of additional valences takes place in the absence of the bacterial types for which the regenerated bacteriophage becomes lytic. Since Bronfenbrenner was working with a bacteriophage for gastro-intestinal bacteria with anticolon specificity as the dominant or most resistant monovalence, his results are of more than mere academic interest.

## *Medical Economics*

### A NEW EXPERIMENT IN INDUSTRIAL MEDICINE

M S BLOOM, M D  
BINGHAMTON N Y

A unique experiment in industrial medicine, which permits absolute freedom of choice, is under way in Binghamton, N Y. The experiment is sponsored by Spaulding Bakeries, Inc., wholesale bakers of bread and cake products. A study of the plan reveals certain facts which are of significance to the medical profession.

Although experience on this plan is limited to the one year of its operation, the sponsors are confident that no obstacles to its further continuation present themselves. I am medical adviser of the Spaulding Employees' Mutual Benefit Association as the Binghamton organization is called, and have worked intimately with the employers and employees in formulating the plan and supervising its operation.

This mutual benefit association is a voluntary organization of employees and is democratic in form. Executive control is vested in a board of governors, composed of officers elected by members of the association and by a board of trustees appointed by the president of the company. Revenue is derived by a system of dues, paid into the treasury by members and in proportion to the wage they receive by virtue of their employment. The company contributes to the fund on a dollar-for-dollar basis. That is, for each dollar collected in dues from the membership, the employer contributes one dollar to the association treasury.

A notable and highly significant fact is that the benefit association was originally organized in 1930 with medical service provided on the contract basis—a basis quite generally found at the present time in industrial medicine. Reasons for the change from a contract basis to freedom of choice, and the results of the change from the standpoint of the association members and the practicing physicians of the community, present many interesting developments.

Some business executives consider the health of their employees to be an economic problem, the adequate solution of which will show up advantageously in their reports. A few employers go further than that. Entirely apart from the economic aspects involved they take a personal interest in the health of the men and women whom they employ. Frequently employees are not considerate of their own physical well being, and this becomes a personal problem of the management and deserves thoughtful consideration. A combination of the economic aspects and of the purely personal significance of the problem within the organization led to the formation of the benefit association.

Under the plan as first organized in 1930 a group of physicians were selected under contract, to provide the necessary medical service. From time to time, members of the association reported that they preferred to go to their own family physician for treatment. Further, officers of the association came in contact with cases in which members continued with their family physicians, in spite of the fact that they were paying dues to the association. As time went on, the employers began to sense that local physicians not connected with the association opposed this type of organization, and the employers felt that this opposition was justified.

The subsequent change in the method of providing medical service was based on definite principles, arrived at by concrete experience. The president of the company felt that employees should be their own judges as to whom they should consult when they were sick. They sensed the tremendous advantage of the personal relationship that exists between physician and patient. The basis of this relationship was confidence. And secondly, medical service was not a commodity which could be bought and sold on a volume basis. The inherent character of the medical profession was independence and justly so because its problems are independent and personal.

With these basic views on the question, the only alternative to suspension of the activities of the association was its reorganization along entirely different lines. Benefits and services under the original plan were in general appreciated by the member-employees, and they did not want the association to be abandoned.

The president of the company called a joint meeting of the officers of the association, the presidents of the Broome County Medical Association, the Binghamton Academy of Medicine and the Binghamton Dental Society and myself. The whole problem was frankly and openly discussed and on the basis of this discussion E J Hotchkiss, president of R Z Spaulding Company, Inc., decided to try a pioneer experiment in industrial medicine.

The association was reorganized with freedom of choice the basic feature, this new plan to continue for one year. There was considerable doubt as to whether the association under its plan of reorganization could successfully operate over a period of time. But a safe financial reserve had been built up under the previous plan, and the worst that could happen would be the depletion of this reserve.

When the experimental period concluded in April, 1933, not only had the original reserve remained untouched but a substantial increase in the reserve had resulted under the new plan, embodying the principles of freedom of choice. At this time the executives of the company and the officers of the association see no reason why the activities of the association should not be continued indefinitely, and possibly extended if it seems advisable, to eight other bakeries operated by Spaulding Bakeries in New York State and Pennsylvania.

#### MEDICAL SERVICE UNDER THE SPAULDING PLAN

The functions of the benefit association are governed by a constitution and by-laws, adopted by the members. The facilities of community medical service agencies are used. Any member of the association may consult any physician whom he wishes. If an employee is sick, he simply obtains from the secretary of the association a form, which he presents to his physician. If the employee is unable to call at the office for the form, he reports this later to the secretary. Both house calls and office calls are permitted.

The members receive medical and surgical attention, including major and minor operations, eye, ear, nose and throat service, roentgen examination, dental service, limited to roentgen examination and extraction, laboratory, and ward service in the hospital, not exceeding thirty days in any one year, and at \$3 per day. When it is necessary to hospitalize a member,

benefits are not paid. They are paid, however, when the patient is released from the hospital except in case of surgical operation. The term "hospital" does not include a tuberculosis sanatorium or institutions for chronic diseases.

The association pays the prevailing medical and dental fees in the community. A special committee consisting of the president of the Broome County Medical Association, the president of the Binghamton Academy of Medicine and the president of the Binghamton Dental Society, and myself, was set up to pass on bills if there seemed to be any question of exorbitance or padding. To date this committee has not been called to confer on this problem.

Benefits are paid when a member is absent from work because of sickness. Members are entitled to ten weeks' sick relief during any one year. The scale of benefits is established in proportion to the amount of dues the particular member pays.

Restrictions are placed on the amount of money that may be expended for medical or dental services on any one member during the course of a year. The maximum is set at \$350 per member. House and office calls are limited to \$50 per member annually, and dental service to \$25 per member.

#### FINANCIAL ASPECTS OF THE PLAN

The membership of the association is divided into classes according to the wage received. There are four classes of employees. The dues paid by the classes are as follows: class 1, 20 cents a week; class 2, 25 cents; class 3, 35 cents; class 4, 45 cents.

For each dollar collected in membership dues the company contributes one dollar to the association treasury. In case of sickness class 1 members receive \$7.50 a week; class 2, \$10; class 3, \$15; class 4, \$20.

During the course of the first year's operation, association members consulted sixty-five different physicians and twenty-five different dentists.

#### CONCLUSIONS

While this experiment has been limited to a relatively small group of people and has extended over a short period its continued operation may bring forth some facts and methods of procedure that may be applicable to larger groups.

The history of the experiment up to this time indicates that small weekly payments by the employees supplemented by an equal contribution by the employer, makes possible the provision of a very satisfactory type of medical service with an acceptable and equitable distribution of costs and the application of the principle of freedom of choice.

The success of this plan, in a great measure, has been due to the splendid cooperation of the doctors and dentists in the community.

110 Oak Street.

## Association News

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

June 13 Hay Fever and Asthma.  
June 15 Summer Cottage Safety

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

June 17 A Human Repair Shop.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**Memorial Library**—In memory of the late Howard W. Estill, D.Sc., assistant professor of bacteriology at the University of California Medical School, Mrs. Estill has given his chemical collection to the library of the medical school and the San Francisco branch of the state medical library. The gift of 150 volumes includes monographs and reference volumes relating to organic physical and colloid chemistry as applied to biology and medicine.

**Personal**—Dr. Addison W. Preston, Visalia, resigned as health officer of Tulare County, June 1, after twenty-five years' service, he was succeeded by Dr. Elmo R. Zumwalt, Tulare. —Dr. John H. Graves, president of the state board of health, was recently appointed medical director of the state industrial accident commission and state compensation insurance fund. —Dr. Ray C. Atkinson has been appointed health officer of Colfax, succeeding Dr. David M. Kindopp.

### COLORADO

**Society News**—Speakers before the Boulder County Medical Society in Boulder, May 11, were Drs. John M. Foster Jr., Denver, on 'Carcinoma of the Lower Lip'; Duval Prey, Denver, 'Gunshot Wounds of the Abdomen'; and Wilfred S. Dennis, Denver, 'Duodenal Lesions Other Than Ulcer'. —A recent meeting of the Mesa County Medical Society was addressed in Grand Junction by Drs. James S. Orr, Fruita, and Frank J. McDonough on 'Morals and Venereal Diseases' and 'Injuries to the Head' respectively. —The El Paso County Medical Society was addressed April 12, by Dr. Louis S. Faust, Denver, among others on 'Diagnosis of Colitis'. —Drs. James E. Jeffery and Earnest O. McCleary, both of Ordway, will discuss fractures of the upper and lower extremities respectively, before the Crowley County Medical Society in Ordway, June 14. Among others, Dr. Harold T. Low, Pueblo, presented a motion picture before the society, May 10 on 'Transurethral Section of the Prostate'. —At a meeting of the Medical Society of the City and County of Denver April 30, a conference on medical economics was conducted by Abraham D. Kaplan, Ph.D., and Dr. Douglas W. Macomber.

### CONNECTICUT

**Dr. Blake Appointed to National Research Council**—Dr. Francis G. Blake, Sterling professor of medicine, Yale University School of Medicine, was recently appointed chairman of the division of medical sciences of the National Research Council. Dr. Blake, who has been a member of the board of scientific directors of the Rockefeller Institute since 1924, has been a member of the division since 1925.

**The One Hundred and Sixty-Ninth Annual Meeting**—The Litchfield County Medical Society held its one hundred and sixty-ninth annual meeting at the Litchfield County Hospital April 25. Dr. Charles H. Carlin, Torrington, was elected president; Dr. Harry B. Hanchett, Torrington, vice president; and Dr. Wilmarth Bradford Walker, Cornwall, secretary. Speakers at the session included Drs. Arthur H. Jackson, Washington, on the nervous system; and Creighton Barker, New Haven, middle ear conditions.

### DISTRICT OF COLUMBIA

**Bill Introduced for Prevention of Blindness**—S. 1787, introduced by Senator Copeland, New York, proposes to provide for the prevention of blindness in infants born in the District of Columbia.

**Appointments at George Washington University**—Announcement is made of the following new full time appointments at George Washington University School of Medicine, Washington:

Dr. Edward Bright Vedder, professor of experimental medicine and executive officer, department of pathology and experimental medicine.  
William Henry Waller, Ph.D., instructor in anatomy.  
Jesse Harmon, Ph.D., instructor in biochemistry.  
Hubert Scott Loring, Ph.D., instructor in biochemistry.  
Dr. James Leslie Snyder, instructor in pathology.  
Dr. John Ralston Pate, teaching fellow in anatomy.

## FLORIDA

**Course in Medicine**—The general extension division of the University of Florida is conducting a graduate course in medicine at the university, June 19-24, under the sponsorship of the Florida Medical Association. The registration fee is \$5. Instruction will be given by the following physicians:

Fred H. Albee, New York.  
William Wayne Babcock, professor of surgery, Temple University School of Medicine, Philadelphia.  
Cornelius G. Coakley, professor of otolaryngology, Columbia University College of Physicians and Surgeons, New York.  
John A. Kolmer, professor of medicine at Temple.  
Charles Jefferson Miller, New Orleans, professor of gynecology, Tulane University of Louisiana School of Medicine, New Orleans.  
William A. Mulhern, professor of clinical pediatrics, University of Georgia Medical Department, Augusta.  
James R. McCord, professor of obstetrics and gynecology, Emory University School of Medicine, Atlanta, Ga.

Members of the faculty of the University of Florida who will be among the instructors include Bernard V. Christensen, Ph.D., professor of pharmacognosy and pharmacology, Perry A. Foote, Ph.D., and William J. Husa, Ph.D., professors of pharmacy, and Townes R. Leigh, Ph.D., dean of the college of pharmacy. Local physicians who will assist in the teaching will be Drs. Lucien Y. Dyrenforth, Joseph Lee Kirby-Smith, Clayton E. Royce and Shaler A. Richardson, all of Jacksonville, and Dr. Joshua C. Dickinson, Tampa.

## ILLINOIS

**Immunization Campaign in Jackson County**—A program of immunization against smallpox, diphtheria and typhoid is being carried on by the Jackson County Health Council, according to the *Illinois Health Messenger*. The county has been divided into thirteen districts in each of which popular meetings will be held, with an address by a member of the county medical society and motion picture films. Local civic agencies are cooperating. The Jackson County Health Council is composed of representatives of agencies interested in public health. The county medical society plans to hold a clinic for physically handicapped children during June.

**Personal**—Dr. George W. Morrow is now in charge of the Kankakee State Hospital, succeeding Dr. Roy O. Hawthorne, who, it is expected, will return to Monticello to resume private practice. Dr. Hawthorne was superintendent of the institution for two years.—Dr. Oscar J. Hagebush has resigned as manager of the Anna State Hospital, after four years' service. Dr. Daniel D. Coffey has resigned in a similar capacity at the Chicago State Hospital at Dunning, after twelve years' service.—Dr. Norman C. Bullock has been appointed health officer of Rockford, succeeding Dr. Nordahl O. Gunderson, who has held the position for ten years.—Dr. Frederick Gruneck has been appointed consultant surgeon to Oak Forest Infirmary.

## Chicago

**Symposium on Silicosis**—Dr. Henry K. Pancoast, professor of roentgenology, University of Pennsylvania School of Medicine, Philadelphia, and Dr. Anthony J. Lanza, assistant medical director, Metropolitan Life Insurance Company, New York, will participate in a meeting on silicosis, June 12, sponsored by the industrial committee of the Chicago Tuberculosis Institute at the Chicago Woman's Club. Dr. Pancoast will speak on "Roentgenologic Diagnosis and Differential Diagnosis in Connection with Silicosis," and Dr. Lanza, "Silicosis in the United States." Dinner will precede the meeting.

**Capps Prize for 1933**—The Joseph A. Capps Prize of \$500 is offered by the Institute of Medicine of Chicago for the most meritorious investigation in medicine or in the specialties of medicine. The investigation may be also in the fundamental sciences, provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who have received the degree of doctor of medicine during the year 1931 or thereafter. Manuscripts must be submitted to the secretary of the institute, 122 South Michigan Avenue, Chicago, not later than December 31.

**Dr. Bensley Retires as Chairman**—Charles Judson Herrick, Ph.D., professor of neurology in the department of anatomy at the University of Chicago since 1907, has been appointed chairman of the department. Before coming to the university in 1907, Dr. Herrick was professor of zoology at Denison University. He is the author of books on biology and neurologic subjects, and has been managing editor of the *Journal of Comparative Neurology* since 1894. Robert R. Bensley, D.Sc., the retiring chairman, will serve until July 1. Although professor emeritus, having reached the retiring age, he will continue to offer graduate work in the department during the next year. Dr. Bensley came to the University of Chicago in 1901 as assistant professor of anatomy. He has been professor since 1907 and chairman since 1913.

## IOWA

**State Medical Election**—At the recent annual meeting of the Iowa State Medical Society, Dr. Charles B. Taylor, Ottumwa, was inducted into office as president. Dr. Gordon F. Harkness, Davenport, was named president-elect, and Drs. William E. Ash, Council Bluffs, and Frank H. Conner, Nevada, vice presidents. Dr. Robert L. Parker, Des Moines, was reelected secretary. The next annual session of the society will be held in Des Moines during the second week of May, 1934.

**Conference on Child Development**—The seventh annual Iowa Conference on Child Development and Parent Education will be held in Iowa City, June 20-22, under the auspices of the Iowa State Council for Child Study and Parent Education, in cooperation with the Iowa Child Welfare Research Station and Extension Division of the University of Iowa, Iowa State College of Agriculture and Mechanical Arts and the Iowa State Teachers' College. The program will be devoted to lectures, symposiums and round table discussions. An institute for child study leaders will be conducted, June 19-24.

## KANSAS

**New Officers for Health Association**—At the conclusion of the annual school for health officers and public health nurses in Topeka, April 19, Dr. C. Herbert H. Munger, Emporia, health officer of Lyon County, was elected president of the Kansas Public Health Officers' Association. Other officers include Drs. Russell E. Hobbs, Wichita, health officer of Sedgwick County, vice president, and J. Carroll Montgomery, Topeka, secretary.

**Personal**—Dr. Isadore J. Berkowitz, Denton, was recently appointed health officer of Doniphan County, replacing Dr. John G. Swails, Wathena.—Dr. Edwin C. Morgan, Clay Center, was recently appointed a member of the Kansas Board of Registration and Examination to succeed Dr. Edgar C. Duncan, Fredonia.—Dr. Herbert A. Browne, Galena, has been appointed a member of the Kansas State Board of Health, filling the unexpired term of Dr. Harry H. Brookhart, Columbus, and Dr. Harry L. Aldrich, Caney, succeeding Dr. Charles M. Jenney, Salina.

## LOUISIANA

**State Medical Election**—Dr. Carl A. Weiss, Baton Rouge, is the president of the Louisiana State Medical Society for the ensuing year. At a meeting of the house of delegates of the society, April 25, Dr. Stanford Chaille Jamison, New Orleans, was named president-elect and Drs. Joseph H. Slaughter, Bogalusa, Marcy J. Lyons, New Orleans, and George W. Wright, Monroe, vice presidents. Dr. Paul T. Talbot, New Orleans, was reelected secretary. The next annual meeting of the state medical society will be held in Shreveport, April 10-12, 1934. The meeting for 1933 which was to have been held at Lake Charles, April 25-27, was dispensed with.

## MAINE

**State Medical Meeting at Poland Spring, June 26-28**—The eighty-first annual session of the Maine Medical Association will be held at Poland Spring, June 26-28, with headquarters at the Poland Spring House and under the presidency of Dr. Elmer D. Merrill, Dover-Foxcroft. Clarence C. Little, Sc.D., managing director, American Society for the Control of Cancer, Bar Harbor, will discuss "Research in Cancer." The program includes the following physicians:

Adam P. Leighton, Jr., Portland, Uterine Malignancy and Radium Therapy.  
Charles H. Gordon, Portland, Infections of the Salivary Glands.  
Magnus F. Ridlon, Bangor, The Menopause.  
Harold J. Everett, Portland, Prenatal Care Including Abnormalities and Complications of the Pregnant State.  
Forrest C. Tyson, Augusta, Clinical Psychiatry for the General Practitioner.  
John R. Hamel, Portland, Cardiorenal Disease and Hypertension.  
Charles B. Sylvester, Portland, Allergic Cumulation and Explosion as Seen in Asthma.  
Edward H. Risley, Waterville, Treatment of Acute Brain Injuries.  
Charles B. Popplestone, Rockland, Differential Diagnosis of Spinal Cord Lesions.  
Warren E. Kershner, Bath, Cycloplegia in Refraction.  
Stephen E. Voshburgh, Pownal, Changing Views as to Cause and Transmission of Subnormality.  
Elton R. Blaisdell, Portland, Treatment of Diabetes Mellitus with Special Reference to Its Complications.  
William R. McAdams, Portland, and Erastus E. Holt, Portland, Ophthalmic Tuberculosis.  
Ernest W. Files, Portland, Diagnosis and Treatment of Extra Uterine Pregnancy.

Dr. Howard F. Hill, Waterville, will conduct a special conference, Tuesday, on "The Year's Progress in Ophthalmology," and Dr. Frederick T. Hill, Waterville, one on "The Year's Progress in Otolaryngology," Wednesday.

## MASSACHUSETTS

**Society of Psychiatry**—At the annual meeting of the New England Society of Psychiatry, April 25, Dr James V May, Boston, was elected president of the society. Dr Forrest C. Tyson, Augusta, Maine, vice president, and Dr Harlan L. Paine, North Grafton, secretary. Dr Clarence M. Hincks, general director, National Committee for Mental Hygiene, New York, addressed the meeting on 'Current Trends in Mental Hygiene' and Dr Felix Deutsch, University of Vienna on 'Psychophysical Problems'. Dr Purcell G. Schube, Hartford, Conn., was awarded first prize in research by the society at this meeting for his article on 'Blood Cholesterol Studies in Mental Diseases'. A second prize was awarded jointly to Dr J. Kassin and Zitha A. Rosen, Howard R. I., for their contribution of 'A Study of Clinical Variables in So-Called Schizoid Personalities'.

**Historic Characters of Medicine Portrayed**—Junior and senior students of Tufts College Medical School, Boston, presented a medical-historical pageant at a meeting of the Essex North District Medical Society in Newbury, May 3. The following characters prominent in medical history, were impersonated by the students: Moses 1220 B. C., Galen, A. D. 130-200, Avicenna, 980-1036, Leonardo Da Vinci, 1452-1514, Paracelsus 1493-1541, Antony van Leeuwenhoek, John Hunter, 1728-1793, Claude Bernard, 1813-1878, Florence Nightingale 1820-1910, Elizabeth Blackwell 1821-1910, and Marie S. Curie, 1867. Babylonian-Assyrian medicine, 4500-2000 B. C., and the first demonstration of ether anesthesia, Oct. 16, 1846, were also depicted on the program. Following the pageant there was an exhibition of Babylonian clay tablets and classic texts by the director of the Boston Medical Library, Mr J. F. Ballard.

## MICHIGAN

**New Low Death Rates**—The lowest death rates in the history of Michigan were noted in 1932 for typhoid, diphtheria and tuberculosis. A new low level was also reached for births and deaths and infant mortality. The general death rate in 1932 was 97 per hundred thousand, the birth rate 166, diphtheria death rate 544, tuberculosis death rate (all forms), 481, and the rate for typhoid 11.

**The Physician's Bookkeeper**—A feature was recently added to the Detroit Physicians' Business Bureau called the Physician's Bookkeeper. Its purpose is to make available to individual physicians the benefits to be derived from scientific bookkeeping and credit management. The Physician's Bookkeeper keeps the physician's books, mails out his monthly statements and superintends the collection of accounts at a small fee. During January of this year this department handled about 2,000 accounts. The Detroit Physicians' Business Bureau was organized by the Wayne County Medical Society in 1915 as a cooperative collection and credit bureau.

**Birthday Dinner to Dr. Burkart**—The Mecosta County Medical Society gave a surprise testimonial dinner to Dr. John L. Burkart, health officer of Big Rapids, recently in celebration of his eightieth birthday. Guests included Drs. George L. LeFevre, Muskegon, and Frederick C. Warnshus, Grand Rapids, president-elect and secretary, respectively, of the state medical society. Dr. Burkart was state health commissioner under the administration of Governor Ferris. He is a past president of the Mecosta County Medical Society and has served as its secretary for the last several years. For many years he was professor of pharmacology and therapeutics at Grand Rapids Medical College.

## MISSISSIPPI

**State Medical Election**—Dr. John W. Dicks, Natchez, was installed as president of the Mississippi State Medical Association at its annual meeting, May 11, and Dr. Edward C. Parker, Gulfport, was named president-elect. Vice presidents are Drs. Eugene R. Nobles, Rosedale, John A. K. Birchett, Jr., Vicksburg, and Charley C. Hightower, Hattiesburg. Drs. Thomas M. Dye and Ellis L. Wilkins, Clarksdale, were re-elected secretary and treasurer, respectively. The next annual session of the association will be held in Natchez, May 8-10, 1934.

## MISSOURI

**Health Council Established**—A health council for Kansas City and Jackson County was recently organized to coordinate the work of public health agencies, in order to achieve efficiency and economy in public health work. The council of the Jackson County Medical Society cooperated with the committee on public health and welfare of the chamber of commerce and the director of health of Kansas City, the late

Dr. Calvin L. Cooper, to construct a working constitution and by-laws for the Health Council. The objectives are as follows:

- 1 To study the needs and problems in the public health field in Kansas City and Jackson County
- 2 To serve as a forum for the discussion of health problems, policies and plans
- 3 To coordinate public health activities of public and private agencies in Kansas City and Jackson County
- 4 To prevent duplication and to promote extension of public health work along preventive lines

Membership of the council is made up of representatives of official and professional organizations, civic bodies, nonofficial organizations, hospitals, and members at large. A coordinating committee will be the governing body. Eligible members must be approved by the committee before acceptance as members of the council. Mr. A. H. Jewell is secretary of the Health Council and the coordinating committee. Physician members of the committee include the following: Edward H. Skinner, chairman, Jabez N. Jackson, director of health of Kansas City, Minford A. Hanna, president, Jackson County Medical Society, George E. Bellows, chairman of health and welfare committee of chamber of commerce, Joseph T. Brennan, health officer of Jackson County, and Eugene B. Perry, president, Kansas City Medical Society.

## MONTANA

**Changes on Health Board**—Dr. George M. Jennings, Missoula, was elected president of the Montana State Board of Health, succeeding Dr. Byron L. Pampel, Livingston. Dr. Enoch M. Porter, Great Falls, was named vice president, and Dr. William F. Cogswell, Helena, re-elected secretary.

**Vital Statistics**—In 1932, Montana recorded new low rates for maternal and infant mortality with respective rates of 6 and 50.1 per thousand live births. A new low rate (56 per hundred thousand) was also noted for tuberculosis. The fewest deaths from scarlet fever (8) were also reported for this year. There was a decrease of 589 in registered births as compared with 1931, while the birth rate dropped from 17.9 to 16.8 per hundred thousand. A decided increase in the deaths for cancer gave the state the highest rate (94.7) it has ever recorded. Deaths attributed to diseases of the heart, the leading cause of death, totaled 856.

## NEW JERSEY

**Changes at Princeton**—Edwin Grant Conklin, LL.D., professor of zoology at Princeton University since 1908, has retired and Edmund Newton Harvey, Ph.D., professor of physiology, has been named to succeed him. Wilbur Willis Swingle, Ph.D., has been appointed to the Edwin Grant Conklin professorship of biology.

**Licensure of Graduates of Foreign Schools**—The New Jersey State Board of Medical Examiners adopted a resolution, April 26, regulating the admission to its examinations of graduates of foreign medical schools, in harmony with the policy recently adopted by the Federation of State Medical Boards of the United States. The applicant must have a certificate from the commissioner of education of New Jersey showing that he has had two years of premedical college work, including French, German, chemistry, biology and physics, must have completed a full course in a European school in good standing with the board and must have a license to practice in the country in which his school is located and a certificate from an approved general hospital that he has served a rotating internship of one year.

## NEW YORK

**Awards for Medical Research**—The Merritt H. Cash Prize and the Lucien Howe Prize awarded under the auspices of the Medical Society of the State of New York, were presented at the annual session in New York to Drs. Harry Hamilton Cooke, Lowville, and Julius Ferber, New York, respectively. Dr. Cooke offered an essay entitled 'A Pathological, Experimental and Clinical Study of Lipoid Deposits in the Gallbladder' and Dr. Ferber an essay on 'The Present Status of Thrombo-Angitis Obliterans with Special Reference to Its Treatment by Intravenous Injections'.

## New York City

**Harvey Lectures**—Dr. Otto Loewi, professor of pharmacology, Medical Faculty, Karl-Franzens University, Graz, Austria, delivered the eighth Harvey Lecture at the New York Academy of Medicine, May 18. His subject was 'Humoral Transmission of Nervous Impulses'. Dr. Jack C. Drummond, professor of physiology and biochemistry, University College London, delivered the seventh lecture, April 27, on 'Recent Biochemical Studies of Liver Function'.

**Hospital News**—The Kate Depew Strang Clinic for Cancer and Allied Diseases was recently opened at the New York Infirmary for Women and Children. The clinic, which cost about \$30,000, was given to the hospital by Dr. Elise Strang L'Esperance and Miss May Strang, in memory of their mother, a sister of Chauncey M. Depew. Dr. James Ewing made the speech of presentation on behalf of the donors and Mrs. Frank A. Vanderlip, president of the hospital board of trustees, the acceptance address. The clinic will have a staff of seven and is equipped with a 250,000 volt x-ray tube.

**University News**—Two courses in gastroenterology are offered to qualified graduates in medicine June 5 to July 31, at Columbia University College of Physicians and Surgeons. A preliminary course, given Monday and Wednesday afternoons, began Monday June 5, and a clinical and laboratory course given also on Mondays and Wednesdays, was initiated Wednesday June 7. The fee for the first is \$25 and for the second \$35. Dr. Zachary Sagal, instructor in medicine is directing the courses. George B. Ray, Ph.D., associate professor of physiology, Western Reserve University School of Medicine, has been appointed professor of physiology and pharmacology at Long Island College of Medicine, Brooklyn. He succeeds Dr. John C. Cardwell, who retired in June, 1932.

### OHIO

**Personal**—Dr. Robert G. Steele Melmore, was guest of honor at a dinner given by the Seneca County Medical Society, May 18, in recognition of his completion of fifty years in the practice of medicine.

**Continuation Conferences**—Western Reserve University School of Medicine, Cleveland, has arranged to present a two day review of recent advances in medicine, June 12-13, in cooperation with the alumni association. A limited number of topics in each division of the curriculum will be selected for brief presentation. Questions and discussions will be invited. If facilities permit, alumni of other schools may be admitted.

### OKLAHOMA

**Society News**—Drs. Lewis J. Moorman and Henry H. Turner, Oklahoma City, among others addressed the Western Oklahoma Medical Society, Clinton, March 21, on "Diagnostic and Therapeutic Pulmonary Problems" and "Anterior Pituitary Sex and Growth Hormones," respectively.

**State Medical Election**—Dr. Tracey H. McCarley, McAlester, was inducted into office as president of the Oklahoma State Medical Association at its annual convention in Oklahoma City, May 15-17. Dr. LeRoy Long, Oklahoma City, was named president-elect, and Tulsa was selected as the place for the next annual session, in 1934. Official business at the meeting included the creation of honorary memberships. These would be applicable to those who had retired from active practice and on recommendation of the county medical society concerned.

### PENNSYLVANIA

**Society News**—The Fayette County Medical Society recently appointed a committee to recommend a list of standard preparations to eliminate proprietaries and thus reduce expense in filling charity prescriptions. Dr. Walter Freeman, Washington, D. C., among others addressed the semiannual meeting of the Association of Trustees and Medical Superintendents of Pennsylvania state and incorporated hospitals for mental diseases and defect at the Elwyn Training School, Elwyn, May 26. Dr. Freeman's subject was "Biometrical Studies in Psychiatry—Population and Death."

### Philadelphia

**Hospital News**—A nine story addition to the Hospital of the Protestant Episcopal Church of Philadelphia was dedicated, May 6. Dr. Charles Geschickter, Baltimore, delivered an address on "Differential Diagnosis of Bone Tumors" at the Jewish Hospital, May 11. A new \$1,200,000 unit for the care of tuberculous patients at the Philadelphia General Hospital, completed more than a year ago, is about to be equipped and will be placed in operation early in August.

**Personal**—Dr. Charles H. Frazier, John Rhea Barton professor of surgery, University of Pennsylvania School of Medicine was recently made a member of the German Academy of Natural Sciences. Dr. Norman S. Rothschild, assistant professor of surgery, University of Pennsylvania Graduate School of Medicine has been appointed chief of the tumor clinic at the Jewish Hospital. Dr. George P. Muller was recently elected a surgeon-in-chief at Lankenau Hospital. Dr. Damon B. Pfeiffer is the other surgeon-in-chief.

**Leidy's Relics Presented to Academy**—Certain personal effects of Dr. Joseph Leidy, founder of American paleontology and eminent in many other fields of science, have been presented to the Philadelphia Academy of Natural Sciences as a bequest from the late Dr. Joseph Leidy II, nephew of the naturalist. The relics include an old-fashioned desk at which many of the famous studies were made, a microscope he used in studying rhizopods, drawings of shells made when he was 10 years old, his lecture pointer, tipped with a metatarsal bone from a human foot, his ivory rule, notebooks, diaries and twenty-five diplomas and certificates from institutions and societies throughout the world and a holograph letter from Charles Darwin dated March 4, 1860. Leidy was elected a member of the academy in 1845 and two years later, at the age of 24, he was elected chairman of its board of curators. From 1881 till his death in 1891 he was president.

### SOUTH DAKOTA

**Dr. Pohlman Goes to Creighton University**—Dr. Augustus G. Pohlman has resigned as dean of the University of South Dakota School of Medicine, Vermilion, to accept an appointment, July 15, as professor and head of the department of anatomy at Creighton University School of Medicine, Omaha. Dr. Pohlman has been dean at the South Dakota school for about a year, succeeding the late Dr. George R. Albertson. He also carried a concurrent appointment as professor and director of the department of anatomy. Dr. Pohlman had occupied a similar position at St. Louis University School of Medicine from 1913 to 1929, when he began special research on deafness. In 1930 he was made research professor of anatomy, giving up his administrative duties to continue his studies of deafness (THE JOURNAL June 4, 1932 p. 1198). He will succeed the late Dr. Herman von W. Schulte at Creighton.

### TEXAS

**Changes in State Medical Board**—Dr. Isaac A. Withers, Fort Worth, has been elected president of the Texas State Board of Medical Examiners and E. Marvin Bailey, D.O., Houston, vice president. Dr. Thomas J. Crowe, Dallas, was reelected secretary. Dr. William E. Watt, Austin, was elected a member to succeed Dr. Herschel F. Connally, Waco, and Drs. Horace C. Morrow, Austin, Marquis E. Daniel, Honey Grove, and James M. Witt, Waco, were reelected.

**Society News**—A symposium on cancer of the breast was presented before the Dallas County Medical Society, May 25, by Drs. Everett C. Fox, John L. Goforth, Ozro T. Woods, and James M. Martin. Dr. Eugene R. Lewis, Los Angeles, was the guest of the Dallas Academy of Ophthalmology and Otolaryngology, May 2, conducting clinics and presenting two papers, on "Physical and Chemical Aspects of Glaucoma and Progressive Deafness" and "Biochemistry as Related to Changes of the Nasal and Sinus Mucosa."

### UTAH

**Personal**—Dr. Garland H. Pace, Salt Lake City, has been appointed superintendent of the Utah State Hospital, Provo, succeeding Dr. Frederick Dunn, who will resume private practice after twelve years' service with the institution.

### VIRGINIA

**Clinics at University Hospital**—The annual spring clinic for practicing physicians was held at the University of Virginia Hospital, May 4-5. A symposium on malignant tumors occupied one day, speakers were Drs. Edwin P. Lehman, Tiffany J. Williams, John H. Neff, Fletcher D. Woodward, William H. Goodwin and Vincent W. Archer. Other instructors were Drs. James Edwin Wood, Jr. on digitalis therapy, Everett C. Drash, surgical treatment of tuberculosis, Lawrence T. Royster, diagnosis of respiratory diseases, and Alfred Chanutin, Ph.D., vitamins.

### GENERAL

**Journals Merge**—The *Archives of Physical Therapy*, *X-Ray*, and *Radium and Physical Therapeutics* have consolidated, retaining the name of the former. These journals were the official organs of the American Congress of Physical Therapy and the American Physical Therapy Association, respectively. The merging of the journals was the result of the amalgamation of the two organizations into the American Congress of Physical Therapy.

**Medical Veterans of World War**—The annual meeting of the Medical Veterans of the World War will take place at the Eagles Club in Milwaukee, June 14, at 9 p. m. Guests

of the organization will include Surg Gen Robert U Patterson U S Army Surg Gen Hugh S Cumming, U S Public Health Service Surg Gen Charles E Riggs U S Navy and Medical Director Charles M Griffith Veterans Administration. No papers will be presented. There will be a smoker

**Winners in Safety Contest**—Pittsburgh and Evanston, Ill were named joint winners of a national traffic safety contest recently conducted by the National Safety Council. Each had successfully carried out every accident prevention activity practicable for a city of its size and each had reduced its traffic death rate by about 30 per cent. The scoring system used was as follows: accident records 50 points; accident reporting 5; traffic engineering 10; traffic law enforcement 15; child safety 10; public education 10; community safety organization 10. Massachusetts was named the safest state. A second contest covering the current year is now in progress.

**Society News**—Dr Oswald T Avery, New York, was named president of the American Association of Pathologists and Bacteriologists May 8 and Dr Howard T Karsner, Cleveland, reelected secretary. The next annual session will be held at Toronto Ont. March 29-30 1934.—The Catholic Hospital Association will hold its eighteenth annual convention in St. Louis June 12-16. Specialization in the hospital has been selected as the theme for the meeting.—The twentieth annual convention of the International Association of Industrial Accident Boards and Commissions will be held in Chicago September 11-15 at the Congress Hotel.

**Conferences on Deafness and Education of the Deaf**—Round table discussions on problems of deafness and the education of the deaf will be conducted at the University of Chicago June 26-July 28 under the auspices of the university and the American Association to Promote the Teaching of Speech to the Deaf. These conferences will be coincident with the International Summer School for Teachers of the Deaf, June 26-August 21. Sectional discussions will cover various problems of administration in common with general education; otologic problems related to deafness; special problems in the education of the deaf; psychologic problems related to deafness; physical problems related to deafness; and social service administration and the education of the deaf.

**Propose Board for Certification of Gastro-Enterologists**—The executive committee of the recently organized Society for the Advancement of Gastro-Enterology has approved a resolution proposing the establishment of a board for the certification of gastro-enterologists. Pointing to the success of similar boards in other specialties, the committee suggested that supervision over the specialty of gastro-enterology be carried out through a board made up of representatives of the American Gastro-Enterological Association, the New York Gastro-Enterological Society, the American Medical Association and the Society for the Advancement of Gastro-Enterology. A committee was appointed to confer with the organizations mentioned, with the following members: Drs Edward L Kellogg, Anthony Bassler, Stanmore L Cash, Samuel Weiss and Gustave Randolph Manning, New York.

**Changes in Status of Licensure**—The Arizona State Board of Medical Examiners recently reported the following:

Dr Harold Porter Collins, Phoenix, license revoked April 3 because of criminal record in the misuse of the U S mails.

The Massachusetts Board of Registration in Medicine reports the following:

Dr Abram Robert Goodman, Quincy, license revoked April 20 because of his court conviction on the charge of conspiracy with intent to defraud.

Dr Townley T French, Boston, license revoked April 20 on account of his conviction in court on the charge of manslaughter.

Dr English N McLaughlin, Roxbury, license revoked May 25 because of his court conviction on the charge of abortion.

Dr Joseph A. St. Angelo, Centerville, R. I., license restored May 25. The license had been suspended July 2 1931.

**Typhoid in 1931-1932**—A review of the occurrence of typhoid in the principal countries of the world during the biennium 1931-1932 has been published by the Health Section of the League of Nations, in *Epidemiological Reports*. The lowest rates 1 per hundred thousand or less occurred in Germany, England, Switzerland, Scotland, Norway, New Zealand, the Netherlands and Sweden. The next lowest group from 1 to 29 included Australia, Austria, Denmark, the Irish Free State, northern Ireland and the Union of South Africa. In the third group in which the rate varied from 3 to 49 were Belgium, France, Canada and the United States. Among countries with a mortality rate of more than 15 are Greece, Italy and

Portugal, but in all these countries the rate represents an improvement. In general, endemic typhoid was found to have increased in most of the countries of central and eastern Europe, considerable epidemics having occurred in Hungary and Rumania in 1932. No massive urban epidemics occurred during the period the statistics showed, although Nagasaki, Alexandria and Teheran had outbreaks that increased the mortality rates to high levels.

**Medical Bills in Congress**—*Changes in Status*. S 1587 has passed the Senate amending an act entitled 'An Act to recognize the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever,' by including Roger P Ames among those honored by the act. *Bills Introduced*. S 1592, introduced by Senator Capper, Kansas, and H R. 5697, introduced by Representative Buckbee, Illinois, propose to prohibit untrue, deceptive or misleading advertising through the use of the mails or in interstate or foreign commerce. S 1628 introduced by Senator Capper, Kansas, proposes to regulate the importation of milk, cream and milk and cream products into the United States for the purpose of promoting the dairy industry of the United States and protecting the public health. S 1740 introduced by Senator Vandenberg, Michigan, proposes to extend hospitalization and medical treatment at hospitals and relief stations of the United States Public Health Service to (a) officers of documented vessels of the United States who are holders of unexpired licenses of the United States Steamboat Inspection Service; (b) seamen who have served forty days or more on a documented vessel during the year preceding application for hospitalization or treatment; and (c) seamen whose wages were diminished by reason of contributions made to the fund for the relief of sick and disabled seamen. S 1785, introduced by Senator George, Georgia, proposes to amend an act entitled

'An Act to maintain the credit of the United States Government by providing domiciliary care to persons honorably discharged from the Army, Navy, and Marine Corps of the United States where they are suffering with permanent disabilities tuberculosis or neuropsychiatric ailments and medical and hospital treatment for diseases or injuries' H R. 5611, introduced by Representative Fish, New York, provides for the forfeiture of vessels, vehicles or other means used to transport or conceal unstamped narcotic drugs, or to facilitate the purchase and sale thereof. H R. 5626, introduced by Representative Hoepfel, California, proposes to amend the act entitled

'An Act to maintain the credit of the United States Government' so as to provide men discharged from the Army, Navy, Marine Corps or Coast Guard for disabilities incurred in line of duty with domiciliary care when they are suffering from permanent disabilities tuberculosis or neuropsychiatric ailments, and medical and hospital treatment for diseases or injuries. The bill further provides that transferred members of the Fleet, Naval and Marine Corps Reserve and all persons on the retired list of the Army, Navy, Marine Corps and Coast Guard shall be considered as having been honorably discharged. H R. 5700 introduced by Representative Beam, Illinois, proposes to amend an act entitled 'An Act to recognize the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever' by including the name of Gustaf E. Lambert among those honored by the act. H R. 5722, introduced by Representative Dickinson, Missouri, proposes to increase the tax on distilled spirits for nonbeverage purposes to \$5 on each proof gallon or wine gallon when below proof and a proportionate tax at a like rate on all fractional parts of such proof or wine gallon.

## FOREIGN

**Brussels Medical Days**—The thirteenth session of the Brussels Medical Days will be held June 24-28, under the presidency of Prof Valère Cocq. The program will be confined to discussion of syphilis in its relation to the various medical specialties. Information may be obtained from Dr Rene Beckers, secretary-general, 141 rue Belliard, Brussels, Belgium.

**Society Offers Medal**—The Royal Society of Edinburgh will present a medal known as the David Anderson Berry Gold Medal and a sum amounting to about £100 in July, 1935 to the person who in the opinion of the council has recently produced the best work on the therapeutic effect of roentgen rays, according to a recent announcement. A similar award is to be presented every three years.

**Cancer Study Course**—A graduate course on cancer will be given at the Cancer Institute of the Faculty of Medicine of Paris, June 16-July 13 under the direction of Dr Gustave Roussy. There will be practical demonstrations and theoretical lectures each day covering many phases of the study of cancer.

The course is offered to both French and foreign physicians and to advanced students in medicine.

**Internships in China**—The Peiping Union Medical College wishes to emphasize that applications for internships can be accepted only from persons with a speaking knowledge of Mandarin Chinese. Many applications are received from persons who are not thus qualified and as it takes about two months for a candidate to receive a reply, the delay is unfortunate for the student when the reply must necessarily be negative, the hospital authorities point out.

**Status of Jewish Physicians in Germany**—The following items were taken from recent issues of German medical journals

The executive committee of the roentgenologic society of Berlin and of the physicians' society of radiology have all resigned. The executive committee turned the commissarial work of the societies over to Prof. Walter Friedrich.

Geh-Rat Prof. Ferdinand Blumenthal, director of the Berlin University Institute for Cancer Research at the Charité, was released from office by his own request.

Dr. Hans Winterstein, professor of physiology at the University of Breslau, was granted a leave of absence.

The numerus clausus and other restrictions in the medical profession and schools regarding non-Aryans will not be applicable to illegitimate offspring who were born before the new law came into effect or offspring with one Aryan parent or two Aryan grandparents.

The German student organization (studentschaft) will accept as members only students of German (Aryan) descent and mother tongue despite their present nationalities. Germans in foreign countries, therefore, and Austrian students are completely eligible to membership.

The students must give their word of honor on application for membership that, according to their best knowledge and conscience, their parents and grandparents were of German Aryan descent.

The society of German physicians in Austria of the province of Styria, presented the government with a petition requesting that foreign Jewish physicians no longer under any circumstances receive Austrian citizenship and the right to practice in Austria. They ask that only a certain percentage of native born Austrian Jewish students in proportion to the total number of Jews in Austria be allowed to matriculate in medicine.

In all public sickness welfare institutions, German physicians should actively predominate and all Jewish physicians employed there should not in any way exceed their allotted percentage. Every member of a sickness insurance society should be asked to select an Aryan physician for treatment whenever possible.

The Egyptian government granted entry into the country and the right to practice medicine to 200 German Jewish physicians who had been dismissed from the sickness insurance companies because of the German regulations against them.

The society of all Polish financial officials at its annual convention demanded that everything German or coming from Germany be boycotted because of the "bestial and barbaric treatment of Poles in Germany." Likewise the Convention of Polish Physicians exhorted its members to boycott all German pharmaceutical products, all German medical works, all German health spas and all German bathing resorts.

The entire executive board of the Berlin Medical Society resigned. Professors Adam and von Eicken are temporarily in charge of business matters. Meanwhile no meetings will take place.

At Frankfurt-on-Main, Dr. Werner Lipschitz, professor of pharmacology at the university, was dismissed during the current semester and replaced by Dr. Otto Gründt, privatdozent in pharmacology and toxicology.

The campaign in Berlin against all non-German writings began, May 6. Among these were some obnoxious materials from the Institute of Sexual Science of Dr. Magnus Hirschfeld, which were carted away in trucks. May 10 the books which were collected from many libraries were publicly burned on the Opera Square.

The director of the Seraphim Hospital in Stockholm, Prof. Israel Hohngren, gave notice that German preparations were not to be used in the future.

At Breslau the hygienist Carl Prausnitz was not given leave of absence but rather his son, the barrister.

### CORRECTION

**Studies in Cretinism and Hypothyroidism in Childhood.**—In the article by Dr. I. P. Bronstein in *THE JOURNAL*, May 27 the average cholesterol mentioned in the seventeenth line of the second column on page 1661 should read 330 instead of 230.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 13, 1933

### The Mechanism of Pain

Dr. David Waterson, professor of anatomy in the University of St. Andrews has published in the *Lancet* results of research on the mechanism of pain. Unlike the special senses, nothing was previously known of the tissues in which pain is excited or of the nature of the receptors. One view is that pain has no apparatus of its own but is produced by overstimulation of the fibers of ordinary sensation. But it has been shown that increase in the intensity of a stimulus causes an increase in the number of impulses that pass along a nerve fiber, altering only the intensity of the sensation and not its quality. Professor Waterson has shown that in the skin the pain apparatus is distinct from that for touch. He found that a layer of epidermis could be shaved off from the finger tips without causing pain, in spite of the fact that the terminals of the nerves of touch were divided. Microscopic examination showed in the removed epidermis the terminals of the nerve fibers and the modified epithelial cells with which they were in contact—the peripheral apparatus for touch. The pain apparatus of the skin lies at a deeper level, in the corium, and responds to a variety of forms of stimulation, such as pricks, burns and cuts. The exact nature of the apparatus is not known, but there is a plexus of nerve fibers in the corium. The passage of the point of a needle through the epidermis is painless, but pain is immediately felt when the corium is penetrated. The corium is not equally sensitive throughout, for it is well known that minute points can be found from which no pain is elicited by needle prick.

Experiments were made on other tissues. When the point of a fine needle came into contact with the brachial artery, sharp pain was immediately felt. If the point was pushed on so as to penetrate the wall of the artery, a sharp pain of a peculiar sickening character, with a feeling of nausea and faintness, was produced. Penetration of the adjacent biceps tendon produced a different sensation not so severe and without the other sensations. The pain from the wall of the artery persisted for a short time after withdrawal of the needle. It was felt mainly locally but radiated down the forearm. The pain response from veins was slight and not comparable with that from arteries. It is known that pain originates from voluntary muscle in response to contraction if the blood supply is impaired. The point of a fine needle was introduced through the skin, if possible through a pain-free spot of the corium, and pushed on into muscle, no distinct pain but a sensation of deep-seated pressure, unpleasant in tone, followed by a sensation of local stiffness, was produced. Movement of the needle point in the substance of the muscle frequently produced a sharp pricking pain. From tendons and fibrous tissue a sharp pricking sensation alone was produced. From bone and periosteum the response to a needle prick was slight. Sometimes no pain was produced even when the needle was pushed into the bone. It may be recalled that the fracture of a bone by indirect violence may produce no pain at the time. The severe pain due to fracture appears to arise from spasm of the adjacent muscles. The conclusion is that pain is not produced by nerves of other forms of sensation but has its own apparatus, mainly in the corium.

Priestley Smith

The death at Birmingham of Priestley Smith, emeritus professor of ophthalmology in the university, at the age of 87 years, removes an eminent ophthalmologist. He qualified in

1871 and at once turned his attention to ophthalmology, becoming house surgeon to the Birmingham and Midland Eye Hospital and then clinical assistant at Moorfields. In 1874 he was appointed ophthalmic surgeon to the Queen's Hospital, Birmingham. A dissertation on glaucoma gained the Jacksonian prize of the Royal College of Surgeons in 1878. He discovered that the lens enlarges progressively in old age. In 1888 he was selected to open the discussion on glaucoma at the Heidelberg congress of ophthalmology. He was the pioneer of modern knowledge of the pathology of glaucoma. His work on the subject was carried on not only during his active life but after he had retired from practice and was a model of scientific investigation in which physical experiments, histologic examinations and clinical study were combined. In 1881 he became editor of the *Ophthalmic Review*. In 1898 he delivered before the Ophthalmological Society of the United Kingdom the Bowman lecture on the Etiology and Educative Treatment of Convergent Strabismus. In 1905-1907 he was president of the Ophthalmological Society of the United Kingdom. In 1927 the American Ophthalmological Society at its congress in Quebec unanimously awarded him the Lucien Howe medal. He contributed the article on Glaucoma to Norris and Oliver's *System of Diseases of the Eye*.

#### Women Physicians

The number of women physicians on the medical register is now 3,391 out of a total of 55,932 names. Many of them hold important official posts. The London School of Medicine for Women has 330 medical students at present. More applications are made to the school for women to fill posts than can be supplied. Miss L. M. Brooks, warden and secretary of the school, states that the present condition is an example of the swing of the pendulum from the postwar years when the medical profession was overcrowded and women who had completed their courses and were qualified were seeking in vain for appointments. Medicine today, says Miss Brooks in a press interview, "is one of the best paid professions open to women. The prejudice which has existed, and does exist, against women practitioners is disappearing with the entry of women into all the professions and with the wider experience of life in general which they have acquired. The greater importance now attached to midwifery and gynecology is to a considerable extent due to the influence of women in the medical profession. The new social conscience with regard to maternal mortality, infant care and national health insurance which necessitates the maintenance by employers of a high standard of health in factories and shops has called for increased service on the part of women physicians and specialists. The financial depression has checked opportunities to a certain extent but women are being sought increasingly not only in big cities but also in country districts."

#### A Declining Birth Rate in Ireland

The universality of the modern decline in the birth rate is illustrated by the fact that in an agricultural country such as Ireland with the birth control movement sternly forbidden by the predominant church the figures tell the same tale as in England, where all these conditions are the opposite. The birth rate for 1932 was 18.9 per thousand estimated population as against 19.3 for 1931 and an average of 20.2 for the decade 1922-1931. This rate, however, is higher than that for England and Wales of 15.3 and for Scotland of 18.6. The death rate for 1932 was 14.4 against 14.5 for 1931 and also for the decade ended 1931. Infant mortality was 71 per thousand births against 69 for 1931 and 70 for the decade.

#### Good Health Notwithstanding Unemployment

In the house of commons Sir E. Hilton Young, minister of health, stated that a careful scrutiny of the reports of the school medical officers for 1931 showed that the condition of

the children had not been affected by unemployment. This was confirmed by inquiries in many areas during the current year. As to adults, their physical condition varied no doubt in different parts of the country but, speaking generally, it was good. Contrary to what might have been expected, it did not appear to have so far been affected by unemployment. In 1932 occurred one of the lowest death rates recorded and an exceedingly low infant mortality, while there were fewer epidemics. The health officers were fully alive to the situation and were vigilant at all times to observe any departure from the normal in their districts. These results were a tribute to our national system for dealing with the evils of unemployment and to the devotion of parents to their children.

#### PARIS

(From Our Regular Correspondent)

April 26, 1933

#### International Meeting of Directors of Red Cross Societies

The thirteenth international session of the directors of the Red Cross societies recently held in Paris, was devoted to the study of transportation of injured persons by airplane and the organization of medical aid en route. Emergency transportation of patients and physicians by airplane is used chiefly in regions in which railway transportation is little developed for example, in Persia, Siam, Australia, Morocco and even in Sweden. Red Cross societies, in various countries, are endeavoring to promote the organization of such service wherever it is needed and are recommending apparatus of a special design universally agreed on in preference to equipment hastily constructed in the various countries. Most of the directors of the Red Cross societies are agreed that the best plan would be for each country to acquire a few airplanes specially constructed for the transportation of the injured. It is admitted, however, that such a plan might necessitate too large appropriations, since such equipment, not being utilizable for other purposes, would be used only on rare occasions. Such special equipment appears to be feasible only in regions in which it is the sole means of transportation, and where, for that reason one would not be inclined to count the cost. Dr. Achtmann, member of the international bureau of health, called the attention of the conventionists to the relatively recent use of the airplane in Persia for the transportation, during an epidemic of cholera, of physicians, nurses and supplies of vaccine, whereby it became possible to vaccinate promptly more than 400,000 Persians. It was at first planned to use army airplanes, but the difficulty is that international regulations prevent army planes from crossing boundary lines. Hence, the idea was suggested of constructing commercial airplanes in such a manner that they can be quickly transformed, in case of necessity, into transports for injured persons on stretchers, accompanied and attended by a physician. In this connection, the Swedish delegate Baron Stejneger and the Norwegian delegate, Colonel Memich, suggested that an agreement be entered into between the Red Cross Society of Norway and the Norwegian commercial air lines for the transportation of patients. The commercial air lines might be induced to equip airplanes that could be quickly transformed into sanitary planes capable of transporting a patient reclining on a stretcher. The cost of transportation might be made the same that the law allows for other means of transportation for the company concerned, in accordance with the existing tariff schedule. In accordance with this suggestion, the Red Cross of Norway granted the first year, by way of trial an appropriation of 6,000 crowns to the air transportation company selected. During the congress at Paris, a demonstration of sanitary airplanes was given at the Bourget airport with a plane belonging to the Compagnie Air-Union, a 'Rapid Azur,' of the Breguet 280 type. Under the supervision of Mr. Petersen, general secretary of the league of

Red Cross societies, the foreign delegates participated in all the maneuvers connected with the installation of the reclining patient in a special cabin within the plane, also in the take-off, and the landing. Mr. Henry Bardel, technical director of the Air-Union, explained to the delegates that all the single motored and double motored planes of his company, which controls air lines from Paris to London and Paris to Marseilles can be almost instantly transformed into sanitary planes. Since the existing flying equipment can now be placed immediately at the disposal of physicians or sanitary officers the sole question that remains is the reaching of an understanding between the Red Cross societies and the various air navigation companies with a view to securing for the use of injured persons such readily convertible planes. Mr. Petersen, general secretary, has established contacts with the International Air Traffic Association which deals with all questions pertaining to international air navigation, with the national groups of the countries interested in sanitary aviation, and with the directors of the air navigation companies of France and England. At the next congress, he will present the text of a definitive agreement.

#### FIRST-AID STATIONS ALONG THE HIGHWAYS

The subject of first-aid stations along the highways brought about an exchange of views. France has at present 2,000 such stations. The league of Red Cross societies, which is studying the subject of standardization, throughout the world of first-aid stations along highways has appointed a permanent committee for that purpose. The French model has served as a basis for the type of station recommended to all societies promoting the establishment of such stations. Twenty-eight national societies have already adopted the French model and eight others are considering its adoption. The French identification sign for first-aid stations which is well known to all automobilists, was likewise accepted at the Geneva conference held in 1931, as a model type to be used on the highways of all nations approving it. The league of the Red Cross societies, which serves as a secretariat for the committee, is collecting statistics on automobile accidents, including the causes, in all the countries of the world. For France, the U N A T has already collected a vast amount of statistical material, the study of which has furnished answers to the following questions: (1) the hours at which most accidents occur, (2) the number of accidents per day, (3) the number of accidents per month and (4) the causes of accidents. It was found that the most accidents occur around 6 p. m. just before the street lamps are turned on. The second most dangerous time for accidents is a short time after the lunch hour—around 3 p. m. The third most prolific hour for accidents is around 11 a. m., when vehicles are left in the streets while their owners go for lunch. The day of the week on which the most automobile accidents occur is Sunday as all have observed. Saturday is likewise to be feared, next comes Monday. Wednesday also is dangerous owing to the large number of open markets held in the provinces on that day. Scrutiny of the statistics reveals that July, the first vacation month, records the largest number of automobile accidents on the highways, next comes October, because of the manifestations of countryside life including the many hunting parties. As to causes the majority of automobile accidents (nearly one half) result from failure to observe the traffic regulations. Twenty per cent of the accidents are caused by other users of the highways. Inexperience or lack of skill accounts for only 7 or 8 per cent. Accidents due to undiscovered causes are about as numerous as those resulting from failure to observe the rules of the road. The accidents due to inobservance of traffic regulations may be classified, in descending order of frequency, as follows: collisions at street or road crossings driving past other vehicles or crossing in front of them excessive speed, passing at curves, poor illumination, too intense illumination, too rapid descent of hills or mountains, the passing of vehicles at the top of hill crests.

#### BERLIN

(From Our Regular Correspondent)

May 1, 1933

#### The Congress of Internal Medicine

The annual session of the Deutsche Gesellschaft für Innere Medizin was held as usual in Wiesbaden just after Easter. The political revolution made its influence felt also at this congress. In place of Prof. L. Lichtwitz of Berlin who was chosen last year to serve as chairman, the congress was conducted by Professor Schittenheim of Kiel, the member of the directorate next in order, who will also serve as chairman at the 1934 session. In his address, he emphasized that this session marked a mile-stone in the history of the *gesellschaft*. He brought out the following significant ideas. As an important section of the German medical profession, it is the duty and the desire of the *gesellschaft* to do its part in promoting all forms of national development in order that the progress of German culture and German intellectual life may be in keeping with Germany's claim to intellectual leadership. A foreign invasion, more particularly from the East constitutes a menace to the German race. It is an imperative necessity that this menace be now suppressed and eliminated. Also before this *gesellschaft* racial problems and questions dealing with hereditary biology must receive especial consideration. The impetus that such research has received through the initiative of the chancellor of the reich and of the circles that stand back of him merits our recognition and gratitude. Eugenics and the influences of heredity must be the preferred topics for discussion at our next session. The clarification of all the questions associated with the crossing of races will require many years of study. There can be no doubt that a regeneration of a people from within constitutes the best means of preserving its true nature. Notwithstanding the severity of the measures to be adopted for the preservation of the German race and German culture the luster of the services of such men as Ehrlich, Neisser, Minakowski and von Wassermann will not be dimmed for full recognition will continue to be accorded them. We must, however, be permitted to assert that the development of these men would not have been possible without the intimate association with the German race and without the influence of the German mode of life and mode of thinking. A great genius will still be able to rise in Germany to a high position at least a little later, after the German people has recovered from the present economic depression.

In connection with the new impetus for expansion that has seized hold of our people it is pleasing to note the energetic endeavor to liberate the physician and the patient from the chains of an impracticable and not infrequently demoralized and demoralizing health insurance system and misguided social politics. The nucleus representing praiseworthy social aid will, however, be retained. With great satisfaction the National-Sozialistischer Aerztebund counts among its aims the restoration of the family physician on whom devolves the task of preserving the public health and promoting race hygiene by means of his beneficent ministrations within the family as of old. Through recognition of the "principle of accomplishment" overcrowding of the medical profession is to be prevented. The high standing of German science throughout the world is to be guaranteed by men who by reason of their origin and character, are called to be leaders and teachers of the youth of the country. It is to be hoped that thus the medical profession may soon be freed from the quacks and charlatans.

After this presidential address, the scientific work of the session was taken up. The program of the session had undergone many changes during the weeks immediately preceding its opening. Prof. E. Laqueur had withdrawn his proposed paper on "The Problem of the Suprarenals." The first main topic dealt with "Diseases of the Erythrocytes and Hemo-

globin' Hans Fischer, chemist of Munich who discussed the chemical and physiologic aspects of the problem, called particular attention to the extensive research on the porphyrins and to the established close relation between hemoglobin and chlorophyll. In severe poisonings and also in other diseases the porphyrins are excreted in the urine which takes on a dark burgundy-red color. These porphyrins, as the second speaker, Kaemmerer of Munich brought out belong to the fluorescent substances that produce sensitiveness to light. If porphyrin is administered to light colored animals such as white mice and they are then exposed to sunlight they suffer severe injuries due to the light and develop cutaneous diseases and mutilations of the extremities resulting finally in death. Many human beings with porphyrin disturbances become in this manner exceedingly sensitive to light and, in spite of avoidance of intense illumination, present severe cutaneous disturbances and mutilations of the extremities. Others are attacked by severe intestinal colic, and sometimes with ileus paralysis, delirium and the like. Kaemmerer considered the possibility as to whether some psychopathic conditions might not be found to be due to porphyrin disturbances. Seyderheim of Frankfurt-on-Main spoke on the synthesis of the blood. The functioning of the red corpuscles depends, to some extent on the supplying of a normal amount of building material in which vitamins play an important part. Disturbance of their resorption in the intestine may lead to anemia and reduction in the calcium content of the bones. In a healthy person it is the task of the gastric juices to break up food substances and to separate out such materials as are needed for blood formation. Reduction or impairment of the gastric juices will have causal importance for the genesis of progressive anemia, in which a liver substance needed for blood formation is not present in normal quantities. Hence, liver eliminates anemia temporarily, following its ingestion.

On the second day, F. Schellong the chief physician of the clinic of the chairman in Kiel delivered an address on low blood pressure. An important role is hereditary predisposition. The therapeutic indications point sometimes to rest and sometimes to physical exercise and medical treatment. Similar conditions occurring in severe disorders of the midbrain and the hypophysis arouse the thought that a hypofunctioning of those organs plays a part in low blood pressure.

The last main topic concerned the importance of the heavy metals. The first speaker was W. Heubner pharmacologist, of Berlin. The smallest living organisms require for their bodies such metals as iron, nickel and copper. The more highly developed organisms need iron for the hemoglobin and cellular respiration. A metal may act in various ways. Some heavy metals (iron and copper) accelerate certain chemical processes, particularly respiration. Aside from these necessary metals, others exert a disturbing influence on the cells through the replacement of chemical cellular components and thus develop a toxic action (silver, mercury, gold, copper, lead, zinc). Some precious metals, particularly gold and silver are used against infections. The results and the action are, however, still subjects of controversy. The clinical importance of the heavy metals was discussed by P. Martini, internist, of Bonn. The most important heavy metal from a clinical point of view is lead, and mercury follows, much more infrequent are chronic chrome, zinc, manganese, thallium, barium, bismuth, silver and gold poisoning. All heavy metals and their salts may cause poisoning through entrance into the blood stream. In comparison with poisoning caused by lead and mercury other poisonings due to heavy metals are insignificant. Manganese, however, causes typical poisoning and zinc fever is well known. The remaining clinically important metal poisonings are due almost exclusively to metals with an atomic weight above 200. It is impossible for the differences in poisonings to be based entirely on quantitative differences. There must be essential differences

in the mode of action. There is no uniform clinical conception of poisoning due to heavy metals.

A manuscript from the Zurich toxicologist Zangger, supplemented by the experiences of the speaker, Baader of Berlin followed. Often poisonings are caused not by the metals themselves but by organic compounds of preparations that arise as by-products in the processes of manufacturing, many of which do not have the appearance of metals but are oily and, in part transparent fluids. They are used on the farm or in the home and generally have a trade name, so that the layman, and even the physician, does not know their composition. A law should be enacted requiring a 'poison' label on which is given the composition of such products. In Germany, around 1,500 cases of lead poisoning are notified annually, strange to say, only 0.2 per cent of the cases originate among printers, so that the belief that printers are especially endangered is no longer justified. Lead poisoning among artists is now relatively rare. Since the enactment in 1925 of a law granting compensation for industrial poisoning due to metals there have been numerous cases of simulation. Baader stated that it is possible to establish beyond doubt in which cases the symptoms are genuine and in which cases they are simulated.

## ITALY

(From Our Regular Correspondent)

March 31, 1933

### Meeting of Academy of Sciences

The Accademia Pugliese di scienze held its regular session in Bari, under the chairmanship of Professor Gaetano Trinchera reported the results of research on the gallbladder following ligation of the cystic duct either with or without ligation of the vessels. A similar operation was done on a normal gallbladder after provoking an acute cholecystitis. Blocking of the cystic duct was done from time to time either with a full gallbladder or following its evacuation. After blocking of the duct with the cystic vessels, the speaker observed almost total and complete atrophic sclerosis of not only the gallbladder but also the hepatic bed. A similar observation was made on the gallbladder with provoked acute cholecystitis. If, on blocking of the cystic duct, the artery and the vein are left intact the changes produced are much slighter. From his experimental results the speaker drew deductions that possibly apply to man. Cetroni discussed three theories in regard to the association of tuberculosis with endometriosis, namely that the association is casual, that the diffusion of tuberculosis is facilitated by endometriosis, and that the tuberculosis stimulates the mucosa and brings about an invasion of the myometrium. None of these views can be rejected a priori. Some cases that were observed tend to support the fundamental importance of tuberculosis in the genesis of endometriosis.

Milella discussed variations in the blood proteins following the introduction of sodium chloride. He observed that after large doses of sodium chloride have been injected into the veins of dogs these electrolytes become strongly fixed in the liver and a disturbance of the protein equilibrium of the blood results, with an increase of the globulins and a decrease in the albumins.

Ferrannini spoke on pneumosclerosis that develops in workers in sulphur. He demonstrated that the granules of sulphur are never destroyed by phagocytes and that the inhalation of powdered sulphur causes a hypercalcemia that is regarded as characteristic of pneumosclerosis. He described the symptoms observed in forty sulphur workers and the relative radiologic manifestations. He noted in the acute forms a desquamative pulmonitis, and in the subacute forms a slight reaction of the connective tissue which is much more evident in the chronic form. The speaker concluded that the sulphur dust is capable of causing a pneumosclerosis the signs of which are found with great frequency in sulphur workers.

### Research on the Blood Vessels

Luisada of Naples carried out research on the isolated blood vessels, studying the electrical phenomena that are produced in isolated arteries and veins, spontaneously and also when they are subjected to rhythmic interruptions of the blood flow. The isolated vessels, and particularly the veins, furnish important electrical complexes, as Luisada has announced to the Academy of Sciences in Naples. The speaker described also the slow electric waves that accompany the variations in the form of the walls. By means of pharmacologic experiments, Luisada showed that biologic currents are involved. The slow waves appear to be "tonic currents" and the rapid waves "action currents."

The speaker sought to discover whether his deductions are applicable to the normally pulsating arteries. By means of a special apparatus, and grafting an arterial stump into another living artery, the speaker found that every electrical phenomenon disappears completely after suturing of the stump. Luisada concluded that the blood does not furnish appreciable currents of a physical nature as it flows through the arteries, and that, in all probability, all the electrical phenomena presented by a living artery are of a biologic nature.

### RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1933

#### Symmetrical Lipomatosis

The *Brasil-medico*, in its March 18 issue, published an article by Dr. Joaquim Moreira da Fonseca, assistant to the Medical Clinic of the Faculty of Medicine of Rio de Janeiro. He says that symmetrical lipomatosis may be general or local (cervical and thoraco-abdominal). The tumors are symmetrical, diffuse, round or oval, varying in size from that of a hen's egg to that of a large orange, painless, soft, movable, nonadherent to the skin and of more or less rapid growth. They are found in the neck, thorax, abdomen and lower limbs, being less common in the thoraco-abdominal region. In the neck the lipomas form a thick collar, giving to the cephalic extremity the appearance of a truncated pyramid with its base at the lower end, in the thoraco-abdominal localization there is a pseudogynecomasty, and in the abdominal region there are four large adipose pendulous tumors separated by a double groove in the form of a cross, the intersection of which is found over the umbilicus. There is a variety called by Roch discrete lipomatosis in which the lipomas are numerous (from ten to fifty), circumscribed, localized on the forearms, thighs and waist, without perfect symmetry; these have a predilection for the male sex, arise during infancy and adolescence and have a slow and, at times, regressive evolution. Symmetrical lipomatosis predominates much more in men than in women and appears generally during the period of the change of life. The etiology is obscure and does not present a hereditary or familial character; alcoholism is present in a large proportion (40 per cent). The pathogenesis is not clear, its ganglionic origin recognized by Launois and Bensaude cannot be accepted, except in a small number of cases. The cutaneous theory of Unna and Gräsch is also faulty. The theory of the influence of the glands of internal secretion seems more plausible, especially that of the hypophysis through a hypofunction of its posterior lobe. The part played by the sympathetic nervous system is undoubtedly important. Symmetrical lipomatosis may be qualified as an "endocrinomimetic syndrome." As to the medical treatment, preference is to be given first to hypophyseal, then to genital and, lastly, to thyroid opotherapy, besides diet and physical therapy. Surgical treatment is justified when the lipomas are a nuisance but is compulsory when they produce dyspnea, dysphagia or cerebral ischemia on account of their location in the neck. The operation is delicate but not dangerous.

### Cutaneous Leishmaniasis

In the January issue of the *Anuário paulista de medicina e cirurgia* of São Paulo, Dr. J. Mattos Barretto describes the two distinct clinical features of cutaneous leishmaniasis, Oriental boil and American leishmaniasis, and states that, being primarily an infection of the skin, leishmaniasis manifests itself only secondarily in the mucous membranes of the upper respiratory tract. He points to the noneffectiveness of the general treatment by antimonial and arsenical preparations in a great percentage of cases. He describes diathermic fulguration and superficial diathermic coagulation by modern high frequency apparatus. Their disrupting and coagulating action, being moderate, superficial and circumscribed spares the underlying tissues, which are always left with sufficient vitality for regeneration, and their sterilizing and hemostatic action prevents dissemination of infection through the blood and lymph vessels. The apparatus consists of the directoscope of Haslinger and the electrode of Poyet. Embrocations with methylene blue (methylthionine chloride U. S. P.) are used after the applications. Instillations of mentholated oil are indicated until the falling of the crust from eight to ten days later. If necessary, another application may then be made. On thirty-seven observations from January to June, 1932, in the service of Prof. Paula Santos, the author has obtained fourteen cures, confirmed by biopsy and histologic examination.

He concludes that diathermic fulguration and superficial diathermic coagulation constitute a valuable method in conjunction with the general treatment by antimonial and arsenical preparations.

### BUDAPEST

(From Our Regular Correspondent)

April 29, 1933

#### The Payment of Fees

Recently the Budapest Medical Casino held a special meeting to discuss ways and means for physicians to collect their fees. Most doctors regard it as below their dignity to sue for their fees. This is wrong, in the opinion of prominent members of the Hungarian medical profession. There is not a doctor who would not attend poor patients gratis, but it is unfair that well-to-do patients should not pay the fee of the physician. The president of the meeting proposed that physicians should be paid for each visit and consultation, respectively, and that fees are due immediately after the termination of the attendance. If the patient does not pay his bill within a month, he should be warned in a registered letter, and then if he fails to pay, he should be sued. Then it will not happen that families of physicians will be exposed to poverty and misery. They also resolved that specialists and operating surgeons should not begin a long treatment without the patient paying in advance at least one third of the agreed sum.

#### Graduate Medical Teaching

The economic situation has affected also graduate medical teaching. Village doctors cannot afford the expense connected with living in the capital for from two to four weeks and the state is unable to grant as many subsidies as it did in former years. In 1930, 933 physicians were granted full subsidies for the duration of the courses but in 1931 only 479 physicians could be granted subsidies and in the following years still less. To make it possible for urban physicians to attend graduate courses, Prof. Emil Grosz, president of the Central Committee of Postgraduate Teaching, made arrangements that courses be held also in larger towns and cities. If there are no competent lecturers in the rural towns, the central committee appoints university men to hold the lectures. Owing to the financial situation, further reductions of the budget threaten. In spite of this, the central committee continues the graduate teaching of physicians, which is more needed than ever. The

mini-try of welfare has erected the House of Physicians, where country physicians can have free board while attending graduate courses. Last year, eighty-two physicians had free board and hundreds of others enjoyed board at highly reduced rates. During the courses last year, about one third of those in attendance were foreigners.

### Two Budapest Professors Honored

The medical faculty of the University of Lyons France has appointed Dr. Alexander Koranyi professor of internal medicine at the Budapest University, and Prof. Dr. Emile Grosz professor of ophthalmology and president of the International League for the Campaign Against Trachoma, as honorary physicians. The ceremony was held with great solemnity in March.

### A New Medical Monthly

Under the able editorship of Dr. Vilmos Muller, counselor to the royal court, a monthly paper with the title *Nepvedelem és Tuberculosis* (The Protection of the People and Tuberculosis) was launched in April. The new monthly will deal particularly with tuberculosis, with special reference to prevention.

### Roentgenologists Refuse to Take Part in Congress in Germany

Hungarian roentgenologists who are members of the German Roentgen Society received a circular letter from Vienna saying that Professor Kienbock, the pioneer of roentgenology, resigned from the position of president of the congress to be held in Bremen this summer and that neither he nor the Austrian members of this society will go to the congress. The resignation of Professor Kienbock followed preliminaries that were unprecedented in medical history. Professor Kienbock's scientific fame is known all over the world with Professor Holzknecht he founded the Vienna Roentgen school.

The secretary of the German Roentgen Society sent a polite letter to Professor Kienbock, informing him that they have to adjust themselves to the general German political situation and to see that the officers and lecturers of the congress are exclusively of Aryan race.

Professor Kienbock is the brother of Dr. Otto Kienbock, a leading member of the Austrian Christian-Socialist party, several times member of the Austrian government and now president of the Austrian National Bank. This, however, was insufficient, in present German eyes to be president of a German society, because the mother of the Kienbock brothers was of Jewish descent.

Kienbock sent the letter to the Austrian Roentgen Society, whose members decided unanimously that among such circumstances they do not wish to partake in the Bremen congress.

Moreover, two prominent Vienna professors, Dr. Arthur Schüller and Dr. Gottwald Schwartz, both have withdrawn their contributions. Likewise a well known Hungarian roentgenologist canceled his lecture.

The Hungarian Roentgen Society emphasized that its withdrawal from the congress was only an act of solidarity among its members.

### The Journal

The *Orvos Szóvetség*, a Hungarian medical journal in a recent issue devotes three pages to a description of the American Medical Association and THE JOURNAL. The article extols the work of the Association, saying that the Association is idealistic and fulfils its duty in the most perfect way. To its great merit, it has built up a professional standard that is not surpassed in any country of the world. In this noble effort it is greatly assisted by its official paper THE JOURNAL, which, it may be said, is the best medical weekly paper in the world. It is edited in an exemplary way, and its columns represent the best that medical literature can offer. One who peruses its articles can dispense with all other medical journals.

## Marriages

LAWRENCE LINCOLN BEALL, Durham, N. C. to Miss Virginia Graham McLean of Cleveland, Miss., April 16.

GRANT E. METCALFE, Brodheadsville, Pa., to Miss Evelyn Rose Steele of South Bend, Ind., May 6.

CEDRIC CAESAR CARPENTER, Summit, N. J., to Miss Ottilie Elisabeth Schreiber of New York, May 6.

WILMORE R. SHERRICK to Mrs. Helen Crouch Long both of Richmond, Va., March 25.

HAWES CAMPBELL, JR., to Miss Ellen James Hudgens, both of Richmond, Va., April 14.

IRWIN CLAY HANGER to Miss Sarah Baldwin, both of Cleveland, April 8.

## Deaths

William Thomas Councilman, for thirty years Shattuck professor of pathological anatomy Harvard University Medical School, Boston, died suddenly, May 26, of heart disease at his summer home in York Village, Maine. Dr. Councilman was born in Pikesville, Md. Jan. 1, 1854. He received his M.D. from the University of Maryland School of Medicine, Baltimore in 1878, studied at universities in Vienna and Leipzig, and received honorary degrees from Harvard, Johns Hopkins, Maryland and McGill universities. He was associate and associate professor of pathology, Johns Hopkins University, 1886-1891 and in 1892-1922 Shattuck professor of pathological anatomy Harvard University Medical School. In 1904-1909 he was a member of the Council on Medical Education of the American Medical Association, and in 1909-1917 a member of the Board of Trustees of the Association. He was a fellow of the American Academy of Arts and Sciences and the Philadelphia Academy of Medicine, a member of the Massachusetts Medical Society, National Academy of Sciences, American Association of Pathologists and Bacteriologists, American Physiologic Society and the American Philosophical Society. He was the author of *Pathology A Manual for Teachers and Students*, and monographs on dysentery, cerebrospinal meningitis, diphtheria and smallpox.

John Leo Sageron, Loretta, Pa., Medico-Chirurgical College of Philadelphia 1898 member of the Medical Society of the State of Pennsylvania, past president of the Cambria County Medical Society, at one time member and president of the board of health of Johnstown, aged 64, formerly on the staffs of the Conemaugh Valley Memorial Hospital and the Mercy Hospital, Johnstown, where he died, April 23, of cerebral hemorrhage.

William Madison Gay, Saranac Lake, N. Y. University of Pennsylvania School of Medicine Philadelphia, 1899, member of the Massachusetts Medical Society, supervisor of veterans' administration facilities, served during the World War, aged 59, died May 13 in the Veterans Administration Hospital, Sunmount, of coronary thrombosis.

Winthrop Allen Risk, Washington, D. C., Harvard University Medical School, Boston 1893, member of the Rhode Island Medical Society, resident physician to the Tuberculosis Hospital of the District of Columbia, aged 64, died May 1 of peritonitis as the result of perforated diverticulum of the intestine.

William Hyde West, Woodstock, Ill., Hahnemann Medical College and Hospital, Chicago, 1911, fellow of the American College of Surgeons, formerly secretary of the McHenry County Medical Society, surgeon to the Woodstock Hospital, aged 47, died, May 11, of injuries received when he fell from a horse.

Henry Zeigler Hissem, Ellsworth, Kan., Bellevue Hospital Medical College, New York, 1883, formerly member of the state board of medical examiners, member of the Radiological Society of North America, on the staff of the Ellsworth Hospital, aged 75, died May 4 of cerebral hemorrhage.

John William Bailey, Seattle, University of Minnesota Medical School Minneapolis 1894, McGill University Faculty of Medicine, Montreal, Que., Canada 1895, aged 63, died suddenly, May 1, at the Providence Hospital, of bilateral pulmonary thrombi and hypernephroma of the right kidney.

Carlton Nelson Russell, Philadelphia, Temple University School of Medicine, Philadelphia 1907, Medico-Chirurgical College of Philadelphia, 1911, also a dentist, professor of oral

surgery and anesthesia, Temple University, served during the World War, aged 57, died May 12, of heart disease

**Joseph M A Gravelle**, St Paul, School of Medicine and Surgery of Montreal, Que Canada, 1892, served during the World War, aged 63, died, March 31, in the Veterans' Administration Hospital, Fort Snelling, of cardiac decompensation and coronary disease.

**Fred James Hatch**, Kansas City, Mo, University Medical College of Kansas City, 1907, member of the Missouri State Medical Association, served during the World War, aged 54, on the staff of St Mary's Hospital, where he died, March 31, of retroperitoneal sarcoma

**Alonzo Clarke Vandine**, Charleston, W Va Louisville (Ky.) Medical College, 1898, member of the West Virginia State Medical Association, formerly member of the state legislature, at one time mayor of Clendenin, aged 60, died, May 2 of coronary embolism

**Herbert Chester Edward Meyer**, Sioux Falls, S D, University of Minnesota Medical School Minneapolis, 1925, member of the South Dakota State Medical Association, aged 35 died April 16, at Rochester, Minn., of carcinoma of the rectosigmoid

**Guy Robert McCreery**, Hugoton, Kan, College of Physicians and Surgeons, Medical Department Kansas City University 1902, veteran of the Spanish-American and World wars, aged 55, died, April 15, in a hospital at Wichita of endocarditis

**Serafino F Chiarulli**, Syracuse N Y Regia Università di Napoli Facoltà di Medicina e Chirurgia, 1901, member of the Medical Society of the State of New York, on the staff of the Crouse-Irving Hospital, aged 59, died, April 29, of pneumonia

**Leonard A Saxer** ♂ Syracuse, N Y, Syracuse University College of Medicine, 1882, formerly member and past president of the board of education, aged 76, on the staff of the Hospital of the Good Shepherd, where he died, May 1, of pneumonia

**Samuel Franklin Klesner**, Flint, Mich, George Washington University School of Medicine Washington D C, 1932, aged 29, intern at the Hurley Hospital, where he died, March 30, of pneumonia following an operation for appendicitis

**Francis B Ricketson**, Warrenton, Ga, University of Georgia Medical Department Augusta, 1887, member of the Medical Association of Georgia, formerly member of the state legislature, aged 73, died, March 26, of heart disease

**John Elmer Heslop**, Beaverton Mich, Queen's University Faculty of Medicine, Kingston, Ont, Canada, 1887, served during the World War, aged 68, died, April 28, in the General Hospital Saginaw, of carcinoma of the prostate

**Frank Hamilton Towne**, Niagara Falls N Y University of Buffalo School of Medicine 1909, member of the Medical Society of the State of New York, aged 46, died in May, at the Memorial Hospital of heart disease and arthritis

**Violet Palmer Brown**, Kankakee, Ill, Northwestern University Woman's Medical School, Chicago 1898, aged 57, died May 16, in the Wesley Memorial Hospital, Chicago, of carcinoma of the liver and diabetes mellitus

**Percy Alexander Riddler**, Fort Smith, Ark., University Medical College of Kansas City, Mo, 1908, member of the Arkansas Medical Society, served during the World War, aged 54, died, April 30, of angina pectoris

**Joseph Frank Fleming**, Trout Run, Pa, College of Physicians and Surgeons Baltimore 1884, member of the Medical Society of the State of Pennsylvania, aged 72, died, April 23, of lobar pneumonia and myocarditis

**Lawrence Edward McDaniel**, Jackson N C University of Maryland School of Medicine Baltimore 1911, aged 52, died May 3, in the Roanoke Rapids (N C.) Hospital, of acute cholecystitis and bronchopneumonia.

**Clarence Sumner Brigham**, Leominster Mass, University of Vermont College of Medicine Burlington 1891, member of the Massachusetts Medical Society, aged 66, died, May 4, of asthma and coronary sclerosis

**Norman Dreisbach** ♂ Minneapolis St. Louis College of Physicians and Surgeons 1894, aged 65, died April 29 in the Minneapolis General Hospital of cerebral hemorrhage, arteriosclerosis and bronchopneumonia

**Dow Taylor**, Supply, Okla, Memphis (Tenn.) Hospital Medical College, 1900, member of the Oklahoma State Medical Association, aged 58, died March 8, of cerebral hemorrhage and chronic myocarditis

**Clinton H Ives** ♂ Dixon Ill Northwestern University Medical School Chicago 1894, past president of the Lee

County Medical Society, aged 66, died, May 15, at Akron, Ohio, of heart disease.

**Everett A Hoyt**, Bay City, Mich University of Michigan Medical School, Ann Arbor, 1881, member of the Michigan State Medical Society, aged 74, died, April 28, of cerebral hemorrhage

**Alfred K Scholl**, Philadelphia Jefferson Medical College of Philadelphia, 1885, member of the Medical Society of the State of Pennsylvania, aged 65, died, May 7, of carcinoma of the bladder

**Charles E Giles**, Chicago, Howard University College of Medicine Washington, D C 1907, aged 50, died, March 5, in the Chicago Municipal Tuberculosis Sanitarium of tuberculosis

**Walker Eugene Stallings** ♂ Denver, Vanderbilt University School of Medicine Nashville, Tenn 1920, member of the Idaho State Medical Association, aged 37, died, May 6

**Katharine A Williamson**, Philadelphia Woman's Medical College of Pennsylvania, Philadelphia, 1887, aged 79, died April 18, in the Woman's Hospital, of cerebral hemorrhage

**B Arthur Middleton**, Emmerton, Va, College of Physicians and Surgeons, Baltimore, 1877, member of the Medical Society of Virginia, aged 77; died April 3, of heart disease

**Hurbie Andrews Taylor**, Stonewall N C., University of Alabama School of Medicine, 1912, formerly member of the state board of health, aged 42, died, April 13, of heart disease

**John Hansford Thomas**, Greenville, Va, Baltimore Medical College 1896, member of the Medical Society of Virginia, aged 60, died, February 1, of cardiovascular renal disease

**Horatio G Lane**, Blanket, Texas, Memphis (Tenn.) Hospital Medical College 1900, aged 71, died April 19, in a hospital at Brownwood of myocarditis and nephritis

**Joseph Freeman Hughes**, Smackover Ark (licensed, Arkansas, 1903), formerly member of the state legislature, aged 69, died April 2, of cerebral hemorrhage.

**Phil S Henderlite**, Pacific Beach Wash Barnes Medical College, St. Louis, 1905, also a druggist, aged 70, died, March 11, in Aberdeen of chronic myocarditis

**Antheine Dutilly**, Montreal Que., Canada, University of Montreal Faculty of Medicine, 1920, on the staff of the Hospital of St Justine, aged 42, died, February 22

**Orthello Waters**, Long Beach, Calif, Chicago Physio-Medical Institute, 1886, aged 72, died April 6, of arteriosclerosis, cerebral thrombosis and myocarditis

**John E Moore**, Shiloh, Ohio, College of Physicians and Surgeons Baltimore, 1890, aged 75, died April 6, of arteriosclerosis and chronic myocarditis

**Owen W James**, Detroit, Meharry Medical College Nashville, Tenn, 1889, aged 64, died, April 24, in the Harper Hospital of military tuberculosis

**William H Hanes**, San Angelo, Texas, Baylor University College of Medicine, Dallas, 1915, aged 47, died, April 30, of pulmonary tuberculosis

**Robert Grenville Day**, St. John N B, Canada, University of Pennsylvania School of Medicine, Philadelphia, 1892, aged 77, died recently

**Marcus Offutt Kagy** ♂ Chicago University Medical College of Kansas City Mo 1911, aged 47, died, May 9, of perforated duodenal ulcer

**James Obed Calkin**, Sackville, N B Canada University of Vermont College of Medicine, Burlington, 1890, aged 73, died March 22

**John Victor Anderson** ♂ Fairview, Okla., Kentucky School of Medicine, Louisville, 1907, aged 57, died, May 7, of encephalitis

**Alexander Boucher**, Loretteville, Que, Canada Laval University Faculty of Medicine, Quebec, 1886, aged 74, died, February 17

**Horace G Jones**, Medaryville Ind, Medical College of Indiana, Indianapolis, 1886, aged 74, died, April 9, of heart disease.

**William Walter Hartman** ♂ Los Angeles Rush Medical College, Chicago, 1923, aged 32, died, April 25, of a gunshot wound

**Harry T Hopewell**, Strasburg Va, Maryland Medical College, Baltimore, 1903, aged 56, died, March 18, of paralysis

**John Allen Nelson**, Owensboro, Ky, Hospital College of Medicine, Louisville, 1898, aged 70, died April 20, of uremia

**C W Goodrich**, Wichita Kan Physio-Medical College, Cincinnati, 1874, aged 91, died, April 17, of heart disease.

## Bureau of Investigation

### BANBAR

#### Another Nostrum for Diabetes

Recently in the federal courts in Pittsburgh a case was tried against one Leo Banks Barlett, an ex-shirt salesman, who manufactured and exploited a product called 'Banbar,' as a cure for diabetes. The government chemists analyzed Banbar and reported that it was a water-alcohol mixture flavored with oil of peppermint and containing considerable vegetable extractive, with epsom salt, potassium acetate, uva ursi (bearberry), podophyllum strychnine, brucine leptandra and equisetum (horsetail). The advertising would lead the diabetic to believe that by using this mixture, he could discontinue insulin and for all practical purposes eat anything that he wanted.

The government was assisted in its case by a number of reputable physicians who testified as experts relative to the worthlessness of a preparation of the character of Banbar. Most of them testified, also, to treating patients who had come to them after using Banbar without results.

The exploiter of the 'patent medicine' on the other hand was assisted by Dr. Frank L. Doering of Pittsburgh and Dr. N. F. Phillips of Mount Lebanon Pa. Dr. Alexander Lowy, professor of organic chemistry at the University of Pittsburgh, appeared as the Banbar's chemistry expert. The Banbar concern also put on as one of its witnesses Clyde H. Campbell, a commercial chemist who is also connected with the Pennsylvania State Department of Agriculture.

The government unfortunately lost its case against this pernicious piece of quackery. The favorable verdict for Barlett may have been due to

the unusual charge made by the court at the time the case went to the jury. Barlett's lawyers submitted to the judge, at the time he made his charge to the jury, certain points that they wished the judge to bring to the attention of the jury. One of these points read:

That if the jury believes that the defendant has received a large number of testimonials from individuals and from medical doctors to the effect that the remedy Banbar had helped them in their diabetic ailment and if the jury further believes that the defendant relied upon these testimonials, then the defendant should be acquitted.

The judge affirmed this point suggested by Barlett's attorneys but rejected the others. This meant, in effect, that if Barlett could produce—as he did produce—testimonials from laymen or uncritical or unscientific physicians and could persuade the jury that, in making his claims for his 'patent medicine' he relied on these testimonials, then he was not guilty of fraud even though he was exploiting a product that was utterly worthless for the purpose for which it was sold.

The government lost its case, it would seem not because of any inability to prove the worthlessness of Banbar and the falsity of the claims made for it—for both its worthlessness and the falsity of the claims made for it seem to have been demonstrated—but because, under the law, the prosecution was compelled to prove *fraudulent intent* on the part of the manufac-

turer. The "patent medicine" interests knew what they were about when they brought pressure to bear at the time the Sherley Amendment to the National Food and Drugs Act was under consideration. It will be remembered that they persuaded Congress to change the original phrase of the amendment, "false or misleading," into 'false and fraudulent'.

If the courts generally take the attitude that was taken in the Banbar case, it will be practically impossible to control the sale of even the most vicious and dangerous of nostrums because it will be virtually impossible to prove fraud, which is essential if a conviction is to be brought in cases involving questions of therapeutic claims. Any one conversant with the disreputable "patent medicine" trade knows how easy it is to obtain testimonials, not only from ignorant laymen, but also from unthinking, careless or venal physicians. If the mere possession of such testimonials is going to be accepted as *prima facie* evidence of lack of fraudulent intent on the part of the 'patent medicine' exploiter, then the public will have little protection against the wiles of the quack and nostrum vender.

## Correspondence

### MALARIA TRANSMITTED BY HYPODERMIC NEEDLE

*To the Editor*—The transmissibility of malaria by means of a contaminated needle has been repeatedly corroborated since the case of Baccelli quoted in the literature of twenty-five and thirty years ago, e. g. Marchiafava and Bignami (Twentieth Century Practice), Mannaberg (Nothnagel's System, vol. "Malaria"). In recent years, since the treatment of dementia paralytica by injecting malaria blood has come into use, several instances of transmission by minimal traces of blood have been noted and commented on. With respect to the case report by Oliver C. Nickum (THE JOURNAL, May 6, p. 1401), the evidence is insufficient and the conclusion unjustified that any of the patients referred to had a malarial infection at this time and if so that the supposedly contaminated needle played any part in it. At least this much comment is in order. Most of the evidence is hearsay from patients, no definite history of malaria is made out and previous repeated negative observations at a hospital throws doubt on the supposed finding of 'organisms of the tertiary [sic] type.' The hypothesis of a reactivation mentioned is fanciful and contrary to the established proof that residual malaria protects against infection with the same strain of parasite. A period of incubation of three days following the use of a supposedly contaminated needle cannot be accepted even as a possibility.

WILLIAM KRAUSS, M.D., Twentynine Palms, Calif

### DANGER TO HANDS FROM BROKEN TAPS

*To the Editor*—Within the past two years we have been called on to treat five cases of severe lacerations of the palm of the hand caused from porcelain tap handles. In each instance the history given was that the tap handle suddenly broke as the water faucet was being turned on or off. A sudden striking of the faucet with the palm of the hand caused a breaking of the handle and the palm was cut against the sharp jagged portion of the handle that remained attached.

These lacerations were all deep and involved the palmar arch, causing profuse bleeding. In one case a terminal branch of the ulnar nerve was cut, resulting in a permanent paralysis of the portion of the hand supplied by that nerve. In the most recent case the cut was deep enough to sever the superficial and deep flexor tendons supplying the fourth and fifth fingers, necessitating a tedious repair.

These porcelain tap handles apparently undergo some crystallization which makes them more easily broken some time after

installation than when new This is merely our conjecture We should like to know whether others are having the same experience with palm injuries from this source

JOHN M. SIMPKIN, M.D., Marshfield, Ore.  
RUSSELL KEIZER, M.D., North Bend, Ore

### THE LOW COST OF BEING SICK

*To the Editor*—So much has been said on the other side of this question that a brief notation of two cases on the low cost of being sick in a hospital I thought might be read with some sense of relief, so I am submitting them for publication

The Foundling Hospital in Dublin as is well known, has a worldwide fame for the practice and teaching of obstetrics When I visited this hospital I was utterly amazed at the simplicity of the building and the equipment of this famous institution It was very efficient, very clean and very homelike Only recently I noted in THE JOURNAL that Dr Bethel Solomons of this hospital after an extensive visit to the United States, was asked to give his impression of American hospitals He replied to the effect that they were far too elaborate and expensive and that with simpler equipment and far less equipment the Irish hospital did as good work as those in any other part of the world And does not the record of this hospital bear out this statement?

Another instance

On a short visit to the ancient and historic town of Blois in the southwestern part of France I took occasion to call on Dr Olivier, a well qualified neurologist who conducts an excellent sanatorium for nervous diseases on the outskirts of that beautiful little city I found that Dr Olivier was mayor of the town, and as I was leaving he advised me to have myself elected mayor of my city assuring me that the duties of the office afforded an excellent mode of recreation Besides the main building the sanatorium consisted of about half a dozen small cottages, clean and attractive with beautiful surroundings of trees and flowers One particular cottage contained about half a dozen women patients, mostly cases of senile dementia and involuntional melancholia, cared for by Sisters The doctor told me that the monthly charge for patients in the cottage was 900 francs (\$36)

I do not have the exact figures as to the cost of keeping patients in the Foundling Hospital, but I am sure it would be much less than in similar hospitals in this country As to Dr Olivier's hospital the cost is amazing being less than one-fourth that in a similar institution in this country

THEODORE DILLER, M.D., Pittsburgh

### DEHYDRATION IN EPILEPSY

*To the Editor*—Dr Fay's communication (THE JOURNAL, May 6, p 1450) apropos of the article "Dehydration in Epilepsy" (Fetterman, J. L., and Kumin, H. J. THE JOURNAL, April 1 p 1005) constitutes a splendid restatement of the concept which he has ably developed In it, however, "dehydration" is relegated to a position as an adjunct in the treatment, whereas, in earlier writings, dehydration is the essential therapeutic measure based on "the mechanical theory of epilepsy" The aim of treatment is to improve cerebral circulation Yet if it could be shown that there was a significant improvement in cerebral circulation, would it benefit a sensitive area in the cortex due to a congenital defect, scarred by birth trauma, or affected by encephalitis in infancy? Or would such improved circulation alter, in idiopathic cases, the factor of sensibility to convulsions, which though intangible, is the vital factor in epilepsy?

The improvement reported from Fay's program may not necessarily result from improved circulation. One must not overlook the reaction from encephalography, the possibly meta-

bolic influence from the change in diet, and the not negligible psychotherapy accruing from a long period of hospitalization Improvement from a procedure may reflect praise to the man as well as proof of the method.

Fay is right in stating that our work did not duplicate his entire program He stresses the harm of limiting fluids to 100 cc a day, stating that the optimum is 600 cc. We did not limit the fluid to 100 cc we reduced it by 100 cc. until from 400 to 600 cc was reached. Further, the communication discounts the inference from a too brief study of several weeks Though some of our patients were observed in the hospital for only three to five weeks, the majority were studied as ambulatory patients for from three to twenty-two months

As regards the question of weight, seven of the nine hospitalized patients lost each from 2 to 9 pounds in about an interval of two weeks The ambulatory cases were not checked for weight loss

The article by Dr Kumin and myself was merely a report of our experience with an everyday trial of limiting fluid intake among patients with chronic epilepsy It claimed no more.

JOSEPH L. FETTERMAN, M.D., Cleveland

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request

### TREATMENT OF SUBACUTE BRONCHITIS

*To the Editor*—Will you please discuss the treatment of acute and subacute bronchitis with drugs particularly the use of ipecac ammonium chloride terpin hydrate creosote and its newer derivatives Physicians everywhere are constantly deluged with drug salesmen and advertising literature in an effort to induce them to use this or that cough preparation I feel that a straightforward discussion of this topic would be timely and valuable and perhaps help to purge most of these shotgun preparations from the drug shelves of the practitioner's office

EDGAR S. KRUG, M.D., McConnellsburg, Pa.

ANSWER—In the treatment of a cough it is necessary to distinguish between the useful and the useless cough Only in the latter are the antitussics, such as codeine, indicated It may be taken as an axiom that, the less of cough "killers" one prescribes in bronchitis, the better for the patient The problem here is to improve drainage from the affected mucous membrane to rid it of infection, to improve its nutrition and thereby favor healing, and to improve the patient's resistance to infection As long as the cough is 'tight,' softening the expectoration should be the aim, for this purpose, water is the chief agent. The so called expectorants, without water, usually fail though water given alone may also be futile All that expectorants can do is to favor excretion of some of the ingested water by way of the bronchial tree. Of the absorbable salines, ammonium chloride and potassium citrate deserve chief consideration in acute bronchitis The former, given freely (0.3 Gm with an abundance of water every hour) is the more potent, but because of its tendency to acidify the system, it should not be used in the presence of a considerable amount of fever, with its tendency to acidosis In such conditions, potassium citrate (from 1 to 2 Gm in a glassful of water every hour or two) might be the remedy of choice In the later stages of a bronchitis, if the cough is still rather unproductive, potassium iodide (0.2 Gm every two to four hours) is more efficient than are the others It is liable to be too irritative and to aggravate conditions in an acute bronchitis Any one of the salines may well be prescribed in syrup of glycyrrhiza the flavor of which is much improved—rendered actually delicious—by the addition of 25 per cent of elixir of amise. For variety, one may use any one of a number of other flavoring syrups, such as raspberry, orange, wild cherry, tolu or tar, so that patients may not get the idea that they all and always get the same medicine because it tastes the same. Steam inhalation, with or without tincture of benzoin addition as flavor, is the second most important loosening influence The nauseants, such as ipecac, apomorphine or antimony and potassium tartrate, are too well established clinically in acute bronchitis to be disregarded because of inability of pharmacologists to offer a satisfactory explanation

tion of their mode of action and they may be added to the salines with the hope of still further directing the excretion of the water

Once the cough is loose and expectoration free, all of these agents are useless. It is at this time that improving nutrition by determining more blood to the affected surface is of value, as is done by tar in the treatment of skin disease. Indeed, as good a remedy as any for this purpose is creosote the beech-wood tar derivative. This may be inhaled its inhalation possibly being rendered more pleasant by the addition of an equal amount of alcohol and of chloroform. Or else it may be given internally in the form of creosote carbonate, in ascending drop dosage shaken up and emulsified with milk three times daily after meals. Terebene or terpin hydrate acts similarly and any of them are probably useless in the small dosages in which they are generally prescribed.

To improve resistance heat is the paramount agent in acute infection the warmth of bed hot drinks heating applications to the chest steam inhalation. In subacute and chronic conditions improvement of the general nutrition is the great desideratum and in addition to liberal feeding (possibly including cod liver oil) sunshine and fresh air are the great reconstructive tonics.

#### EXCESSIVE USE OF BROMO SALTZTER

To the Editor—H. W. a man aged 36 was seen by me for the first time Dec 6 1932 when he complained of a tremendous frontal headache following an accident two days previously when he had been struck down by an automobile. The right orbit was contused there had been some bleeding from the nose and mouth at the time of the accident. The pulse was 112 and the blood pressure 178 systolic 110 diastolic. There were no ocular signs evident spasticity or increased patellar reflexes and the Babinski reflex was negative. Nevertheless I felt that a roentgenogram of the skull should be made which was negative for fracture. Since that time I have learned that he has suffered almost constantly with headache for the past four years although never of such severity as at present. He tells me that he has had the sinus punched out once with some relief. The teeth were roentgenographed at Walter Reed Hospital and doubtful ones removed. The kidneys are negative to urinalysis. The Wassermann reaction has not been reported as yet. I cannot find further evidence of chronic infection. The blood pressure remains elevated and the headache if anything is becoming progressively more severe and resistant to narcotics. I have recently become suspicious that he uses too much Bromo-Saltzter for his own good. However the pain was evidently the cause for forming the habit and I am not certain how much bearing this fact has on his condition. The preparation contains 20 grains of acetanilid to the ounce and I presume could raise the pressure transiently when taken in such huge amounts as the druggist tells me he purchases and has purchased over the past four years. Are there further means of looking for chronic infection or intracranial pressure as a possible cause from some other source?

M. F. RAINE, M.D., Fayetteville, W. Va.

ANSWER—From the history it seems probable that the accident plays no part in the clinical picture other than as a cause of exaggeration of the headache. As suggested also the headache seems to have preceded the abuse of Bromo-Saltzter. Some of the consequences that may follow the excessive use of this drug were given in an article dealing with bromism in mental cases (Wagner, C. P. and Bunbury, D. Elizabeth. Incidence of Bromide Intoxication Among Psychotic Patients. *THE JOURNAL* Dec 6 1930 p. 1725). The duration of the illness the rapid pulse rate and the absence of neurologic signs render it improbable that the condition is due to increased intracranial pressure from an expanding lesion. It seems most probable that this is a case of essential hypertension in which headache is frequent. It is important to exclude syphilis and to look for nitrogen retention in the blood. If these are excluded therapy must be directed toward relief of the hypertension through a regimen of rest and proper diet, with administration of appropriate drugs as indicated.

#### POLLEN INCIDENCE IN MICHIGAN

To the Editor—I would much appreciate receiving from you an expression of opinion regarding the advisability of sending to Charlevoix, Mich., a patient suffering from hay fever. Have you for sale or distribution a chart showing the pollen free districts in the United States?

DAVID PAUL WALDMAN, M.D., New York

ANSWER—If the patient is sensitive to the pollen of trees or grasses there would be no advantage in sending him to Charlevoix, Mich. If he is sensitive to pollen of ragweed and if he now lives in central or southern Michigan or elsewhere in the Central states, it is likely that he would receive some benefit by the change. Much would depend on the degree of his sensitivity. The pollen content of the air at Charlevoix is probably not less than at Mackinac where the total amount of ragweed pollen found in the air during the season is about one tenth as much as at Detroit, Chicago or Cleveland. The

cities along the east shore of Lake Michigan enjoy comparative freedom from ragweed pollen when the wind blows from the lake, but when the wind blows from the land concentration, are often sufficient to cause considerable suffering.

There are no pollen-free localities in the United States. There are districts that are free from certain kinds of pollen. The only area in the United States which is entirely free from ragweed pollen is the north Pacific Coast. California and Arizona are also comparatively free. There are also such local resorts as the White Mountains of New Hampshire which are reported to be ragweed free. We have no definite figures on these resorts. A table containing the annual ragweed pollen figures for a number of cities in the United States over a period of four years appeared in an article by O. C. Durham (*The Ragweed Season of 1932* *J. Allergy* 4:105 [Jan.] 1933).

#### INULIN IN DIABETES

To the Editor—In *THE JOURNAL*, February 4 there appeared an editorial in which it was implied that inulin is an available source of energy and is utilized as are other carbohydrates. It has been our understanding that inulin is not utilized because the animal body does not secrete an inulase for its hydrolysis. This is expressed in a discussion in Hawk's *Practical Physiological Chemistry* (edition 9, p. 95). What is the latest authentic information on this question? We are preparing for publication a handbook of dietetics and should like this information to include with reference to foods containing inulin (mushrooms, salsify, dandelion, soy bean and artichokes).

ESTELLE E. HAWLEY  
ESTHER E. MAURER  
Department of Vital Economics  
University of Rochester Medical School  
Rochester, N. Y.

ANSWER—Inulin is a polysaccharide carbohydrate that yields the simple sugar fructose (levulose) on hydrolysis. It is thus analogous to the more familiar polysaccharides starch and glycogen (formerly designated as animal starch), each of which yields, on hydrolysis, the simple sugar dextrose. The editorial referred to was incorrect in its implication that inulin itself ( $C_6H_{10}O_5$ ) is a sugar. Inulin differs from starch, glycogen and dextrins derived from either of the latter in that the animal body produces enzymes—amylases—that readily convert these dextran carbohydrates into sugar whereas so far as is known there is no inulase that effects a comparable digestion of the levulin inulin. It has repeatedly been demonstrated that amylolytic saliva, pancreatic juice or intestinal juice fails to act on inulin. The latter is however slowly hydrolyzed by acid of the strength of that of the gastric juice at body temperatures. So far as is at present known, inulin cannot be utilized as such by the body. The only physiologic opportunity for utilization lies in the possibility of intragastric hydrolysis to fructose (levulose). The extent to which this actually occurs during alimentation depends on the length of the period during which inulin or inulin-yielding products may remain in the stomach, the effective acidity attained in the gastric contents at the time and the diminution of gastric acidity by other substances such as proteins that accompany the meal. Feeding tests have shown that inulin does not effectively lead to glycogen formation whereas levulose derived from inulin by hydrolysis readily does. This is further evidence that inulin per se is not readily used as the familiar dietary carbohydrates are though the possibility of some utilization cannot be refuted, for reasons already pointed out. Earlier feeding experiments on diabetic patients led to the assumption that inulin is an advantageous food for them. Presumably what happened was that the inulin was destroyed by microbiotic agents in the bowel or excreted in the feces. Under such circumstances the lowered urinary sugar in the diabetic patient would be attributable to lack of absorption rather than to superior utilization. The literature of the subject is reviewed by Joslin, E. P. *Treatment of Diabetes Mellitus*, ed. 4 Philadelphia: Lea & Febiger, 1929, page 629. On the basis of empirical experience he is inclined to believe that inulin in the form of Jerusalem artichokes may be used in small amounts for intermittent periods with pleasure and profit. This is the most favorable opinion that we have found. It is important to point out that inulin occurs primarily in the Compositae. It is present in the Jerusalem artichoke—the Topinambour of Europe—which should not be confused with the entirely different species commonly sold in this country as 'French artichokes'. The soy bean ought not be included in the list of inulin-containing food. Many efforts have been made to grow and market Jerusalem artichokes on a large scale in this country but without much commercial success. Persons should be warned that ingestion of large quantities of inulin is not infrequently attended with alimentary distress presumably due to fermentation.

## KIUMA

To the Editor—What is Kiuma which has been the subject of a blatant advertisement from the president's office of E. Fougera and Co?  
B C D Danbury Conn

ANSWER—According to the advertising the preparation is derived from a "sort of ooze from a native tree from Africa a foul smelling thick gummy substance." Chemists were engaged to overcome the peculiar odor of this gummy material and in so doing they isolated what is stated to be a salicylic ester of dihydroxethane having a salicylic acid content of approximately 90 per cent

A letter was sent to E. Fougera & Co., Inc. by the A M A Chemical Laboratory inquiring whether or not the product was secret and if not what was the quantitative statement of composition. In reply the president of the firm stated that the principal ingredients are the base which is brought from Central Africa, and S E D a new salicylic ester discovered by a British chemist while endeavoring to mask the odor of the basic substance brought from Africa. Particularly amusing was the statement in the letter

Kiuma is being advertised to the medical profession only and in such a way as to place the decision of its efficacy in the hands of the doctor himself in his practice

Evidently E. Fougera & Co. does not appreciate that in the exploitation of drugs to physicians the burden of proof should lie on the manufacturer. It does not reflect credit on the firm nor aid public health when a firm suggests that physicians use a product secret in composition as an experiment for the manufacturer in determining whether or not the substance is of value. As has been pointed out so frequently a physician owes it to himself, to the patient and to the public welfare not to use a compound the composition of which is secret.

There is no evidence available to show that this preparation has been tried in comparison with other well known ointments such as salicylic ointment or "Whitfield's ointment."

Of course the product does not stand accepted for inclusion in New and Nonofficial Remedies, nor has it been submitted to the Council for consideration

## IMMUNIZATION AGAINST TYPHOID

To the Editor—Please give me the latest accepted opinion on the following points: 1 If an adult person is given the typhoid immunization every three years how many years will be required to confer permanent immunization? 2 Does an attack of typhoid confer any degree of immunity? 3 Does an attack of typhoid predispose to subsequent attacks? 4 At what age if any is a person considered practically immune to typhoid?  
C A MICHAEL M.D. Austinville Va.

ANSWER.—1 This question cannot be answered satisfactorily because no knowledge exists bearing directly on the main point. All that may be said with assurance is that with each successive immunization and with the passage of years the immunity undoubtedly would increase.

2 and 3 An attack of typhoid leaves behind it protection against future infections with typhoid bacilli and does not favor subsequent infections.

4 Typhoid is a disease especially of youth and early life. After 40 the disease gradually falls off but it may occur even in old age though rarely. Practically it may be said that after 50 immunity seems to be well established.

## EFFECTS OF CHLOROPHYLL ON BODY

To the Editor—What is the latest theory regarding chlorophyll in vegetable matter in relation to its ingestion in the human body? Has it any effect on man either as a food or as a chemical?

C M PETERS M.D. Canton Ohio

ANSWER.—The researches of recent years have indicated an interesting chemical relationship between the plant pigment chlorophyll and the animal respiratory pigment hemoglobin. This has sufficed to raise the question whether in the animal organism hemoglobin is actually derived from the widely found chlorophyll of plants. It is conceivable on this basis that somehow chlorophyll is converted directly or indirectly into the blood pigment in herbivorous species from these the carnivora might eventually secure their hemoglobin. As a matter of fact however it is experimentally demonstrable that the embryonic organism can produce hemoglobin without having received either hemoglobin or chlorophyll in its pabulum; furthermore, herbivora also can thrive on a ration devoid of chlorophyll. The only established connection between the two pigments lies in the circumstance that they are built up chemically out of the same cyclic components of the protein molecule. A pyrrole group seems to be involved in each

case. In their disintegration, hemoglobin and chlorophyll lead to similar if not identical end products. On the basis of such information and indirect inferences it has been assumed that the human organism can transform the green leaf pigment into the red blood pigment. A combination of chlorophyll (which is iron free) and iron has been recommended, notably by the Swiss investigator Bünig, as a product capable of hematopoietic possibilities. This applies to increase in number of red cells and also in content of hemoglobin in the blood of man. The claims have not won widespread acceptance.

## TUBERCULOSIS ANTIGEN MORRISON

To the Editor—I am in receipt of three 20 cc. bottles of Tuberculosis Antigen (Morrison) put out by the Abbott Laboratories of North Chicago which were apparently sent by a Mr O C Morrison of Carroll Iowa to a resident of Saskatchewan. Can you give me any information respecting this so-called chemical antigen? The T B Antigen contains the fat splitting enzymes incident to the tubercle bacillus! The type-written statement accompanying these bottles over Morrison's name seems very peculiar and there is no reference to authority or to the literature.

ALLAN C RANKIN M.D. Edmonton Alta

ANSWER.—Morrison's "Tuberculosis Antigen" seems to be a physiologic sodium chloride solution extract of tubercle bacilli dried at from 60 to 65 C., ground in a ball mill, filtered through a Berkefeld filter, and tested for sterility. It should possess the same properties of other bacillary extracts similarly prepared many of which have run the gamut of therapeutic experimentation within the last forty years. It appears to resemble the Von Ruck vaccine which has not been used since 1912 and which few people found useful aside from the originator.

## RABIES IN CATTLE

To the Editor—I have a patient whose cow was bitten on the nose by a mad dog April 24. The patient used the cow's milk until April 26. He comes to me with the following questions: Is there any danger of the family developing rabies from using the cow's milk? Is there any danger of his developing rabies from milking the cow? What should he do with the cow? Kindly advise me in regard to these questions.

D D MOSHER M.D. Seminola Okla

ANSWER.—The incubation period in bovine rabies averages from four to eight weeks—rarely it may extend to several months—and consequently it seems safe to conclude that no danger has been incurred in using the milk of the cow in question or in milking the cow. As it is impossible to predict whether the cow will develop rabies no definite advice can be given with respect to the disposal of the animal. Human rabies has followed the bite by supposedly rabid cattle. If the animal is kept alive special precautions should be taken against contamination of scratches or wounds with the cow's saliva particularly as the beginning of the possible period of incubation approaches.

## PROJECTING HAIRS IN NOSE

To the Editor—I have been annoyed by the small cilia or hairs projecting from the nares. I have tried plucking them out but they return with great rapidity. Can you suggest any method of removal? Please omit name.

M D Indiana

ANSWER.—The hairs, or vibrissae projecting from the nostrils have the function of keeping dust and other extraneous substances from the nose. If they are completely removed crusts form and a dermatitis supervenes. The only reason for removing the vibrissae would be that they are long and unsightly. In this event they may be carefully trimmed with scissors. They should never be plucked, as this procedure occasionally leads to furunculosis, and infections of this character about the nose have been known to produce serious complications.

## CALORIC VALUE OF BEER

To the Editor—Will you kindly give me the approximate caloric value of the proteins, carbohydrates and fats contained in one pint of 3.2 per cent beer collectively exclusive of the alcohol. Please give the caloric value of the alcohol separately.

M D Washington

ANSWER.—Beer differs considerably in composition. The following figures are representative for seven types of beers, the averages of about 600 analyses being used.

Lusk in his book "Science of Nutrition," states that a liter of German beer contains from 3 to 4 per cent alcohol yielding 450 calories to the body, of which one half approximately are derived from alcohol and the rest from protein-like extractives and from dextrin.

Beer may be expected to contain in addition to its alcohol content, from 5 to 7 per cent of solid matter or extract, from

0.5 to 0.7 per cent of nitrogenous substances some of which are protein from 1 to 2.5 per cent of sugar as maltose, from 2 to 4 per cent of gums and dextrins from 0.16 to 0.4 per cent of acid as lactic acid and from 0.15 to 0.36 per cent of ash. Fat as such may be considered absent.

A pint of beer will provide approximately 250 calories. These calories are derived from the chief ingredients as follows: protein or organic nitrogen compounds 12 calories, carbohydrates 70, organic acids, 6, and alcohol, 108.

#### POLLENS IN CHICAGO AREA—HAY FEVER AND TUBERCULOSIS

To the Editor—I have a patient with bilateral pulmonary tuberculosis. The patient is highly sensitive to the giant and dwarf ragweed pollens. 1. Kindly inform me of a region close to Chicago where these pollens are not present. 2. What effect does hay fever have on active pulmonary tuberculosis? Please omit name.  
M D, Illinois

ANSWER—1 There is no region near Chicago where giant and short ragweed are absent over a sufficient area to render the locality free from ragweed pollen. Quantitative investigations of the pollen content of the air indicate that so-called hay fever resorts in the Great Lakes area are all subject to frequent pollen contamination from upper air currents, especially

#### Quantities of Ragweed in Chicago and Other Places

City	Average Daily Pollen Count*	Maximum Pollen Concentration for 24 Hours	Dates	Average Annual Pollen Fall†
Chicago	130	502	Aug 27 1932	4 554
Mackinac	10	89	Sept 2, 1929	3.5
Sault Ste Marie	14	92	Sept 2, 1929	500
Port Arthur	9	134	Aug 30 1932	302
Winnipeg Manit	10	70	Aug 20 1931	330

\* Number of granules per cubic yard of air

† Total number of ragweed pollen granules counted on daily slides throughout the season

with strong southwest winds. Statistics for ragweed from the four nearest points investigated compared with Chicago, are shown in the accompanying table. It is likely that by going into the wooded regions of central Ontario the ragweeds could be entirely escaped. In the United States only western Washington and western Oregon are absolutely free from ragweed pollen (Durham O. C. The Ragweed Season of 1932 in the United States, Canada and Mexico, *J. Allergy* 4 105 [Jan] 1933).

2 Hay fever occurs in association with tuberculosis in about 0.1 per cent of cases. Moderate or severe pollinosis indirectly affects the tuberculosis in an adverse direction by causing additional coughing, sneezing, loss of appetite, disturbed rest and loss of sleep. Loss of weight during the season usually results, but not rise in the temperature. Complications such as sinus infections may make matters worse, and coughing and sneezing may bring on hemoptysis.

Treatment of the pollinosis with pollen extracts should be undertaken in the usual manner with special care to avoid constitutional reactions. The treatment is just as successful in tuberculous as in other patients and should result in freedom from pollen asthma and marked diminution in nose and eye symptoms (Lichtenstein, M. R. The Treatment of Pollinosis in Tuberculosis Patients, *Am Rev Tuberc* 26 235 [Sept] 1932).

#### DETERMINATION OF RIGHT OR LEFT IN X-RAY FILM

To the Editor—An x-ray film of a knee is presented not labeled. Can you tell me in what manner I may determine whether one is dealing with the right or left knee? Please omit name.  
M D, New Jersey

ANSWER—If the film is a duplitzed one (i.e. with emulsion on both sides) it will be impossible to determine from the film alone which knee one deals with unless an opaque marker of some kind was placed on the film during the exposure, or unless the technician picked up the film in such a way as to note right or left side and placed a pencil notation on the film in the dark room.

#### PSYLLIUM SEED FOR DIABETES

To the Editor—Has psyllium seed any carbohydrate value? Is it to be considered in the handling of diabetic dietetics?  
M D, New York

ANSWER—No. The seed passes through the alimentary tract without being digested. It can be used by diabetic patients.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

CALIFORNIA Regular San Francisco, July 10-13 and Los Angeles, July 24-27. Reciprocity Los Angeles July 24. Sec. Dr. Charles B. Pinkham 420 State Office Bldg. Sacramento.

COLORADO Denver July 5-8. Sec. Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT Regular Hartford July 11-12. Endorsement July 25. Sec. Dr. Thomas P. Murdock 147 W. Main St. Meriden. Homeopathic New Haven July 11. Sec. Dr. Edwin C. M. Hall 82 Grand Ave. New Haven.

DISTRICT OF COLUMBIA Basic Science Washington June 29-30. Regular Washington July 10-11. Sec. Dr. W. C. Fowler 203 District Bldg. Washington.

ILLINOIS Chicago June 27-30. Supt. of Regs. Mr. Paul B. Johnson. State House Springfield.

INDIANA Indianapolis June 20-22. Sec. Dr. William R. Davidson 413 State House, Indianapolis.

KANSAS Kansas City, June 20-21. Sec. Dr. C. H. Ewing Larned.

MAINE Augusta July 5-6. Sec. Dr. Adam P. Leighton Jr. 192 State St. Portland.

MARYLAND Regular Baltimore, June 20-23. Sec. Dr. Henry M. Fitzhugh 1211 Cathedral St. Baltimore. Homeopathic Baltimore June 20-21. Sec. Dr. John A. Evans 612 W. 40th St. Baltimore.

MINNESOTA Minneapolis, June 20-22. Sec. Dr. E. J. Engberg 350 St. Peter St. St. Paul.

MISSISSIPPI Jackson, June 22-23. Asst. Sec. Dr. R. N. Whitfield Jackson.

NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II. The examinations will be held at centers where there are five or more candidates June 26-28 and Sept. 13-15. Ex. Sec. Mr. Everett S. Elwood 225 S. 15th St. Philadelphia.

NEW JERSEY Trenton June 20-21. Sec. Dr. James J. McGuire 1101 Trenton Trust Bldg. Trenton.

NEW YORK Albany Buffalo New York and Syracuse June 26-29. Chief Professional Examinations Bureau Mr. Herbert J. Hamilton Room 315 Education Bldg. Albany.

NORTH CAROLINA Raleigh June 19. Sec. Dr. B. J. Lawrence, 503 Professional Bldg. Raleigh.

NORTH DAKOTA Grand Forks July 5-8. Sec. Dr. G. M. Williamson 4½ S. 3rd St. Grand Forks.

OREGON Portland July 4-6. Sec. Dr. Joseph F. Wood 509 Selling Bldg. Portland.

PENNSYLVANIA Philadelphia and Pittsburgh July 11-15. Sec. Dr. Charles D. Koch 400 Education Bldg. Harrisburg.

RHODE ISLAND Providence July 6-7. Dir. Dr. Lester A. Round 319 State Office Bldg., Providence.

SOUTH CAROLINA Columbia June 27. Sec. Dr. A. Earle Booser 505 Saluda Ave. Columbia.

SOUTH DAKOTA Watertown, July 18. Dir. Dr. P. B. Jenkins Waubay.

TENNESSEE Knoxville Memphis and Nashville June 15-16. Sec. Dr. H. W. Qualls 130 Madison Ave. Memphis.

TEXAS Galveston June 20-22. Sec. Dr. T. J. Crowe, 918 1920 Mercantile Bldg. Dallas.

UTAH Salt Lake City June 28-29. Dir. Mr. S. W. Golding 326 State Capitol Bldg. Salt Lake City.

VERMONT Burlington June 21-23. Sec. Dr. W. Scott Nay Underhill.

VIRGINIA Richmond June 21-23. Sec. Dr. J. W. Preston 803 Medical Arts Bldg. Roanoke.

WASHINGTON Basic Science Seattle July 13-14. Regular Seattle July 17-18. Dir. Mr. Harry C. Huse, Department of Licenses Olympia.

WISCONSIN Basic Science Milwaukee June 17. Sec. Prof. Robert N. Bauer 3414 W. Wisconsin Ave. Milwaukee. Regular Milwaukee June 27-29. Sec. Dr. Robert E. Flynn 401 Main St. La Crosse.

### Minnesota January Report

Dr. E. J. Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held in Minneapolis, Jan. 17-19, 1933. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Eighteen candidates were examined all of whom passed. One physician was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Minnesota Medical School (1932)	85.5 86.1 86.2 87.3*	(1933) 83.3 83.5	85.3
Washington University School of Medicine (1932)	85.4 86 87.5 88.2	(1931) 80.6	95
University of Nebraska College of Medicine (1932)	85.1	(1933) 90.2	93.1
University of Buffalo School of Medicine (1932)		(1930) 90.2	93.1
University of Manitoba Faculty of Medicine (1932)		(1930) 90.2	93.1
Regia Università di Napoli Facoltà di Medicina e Chirurgia (1932)		(1927) 76.2†	
Kongelige Frederiks Universitets Medicinske Fakultet Norway (1932)		(1922) 86.2	
College	LICENSED BY RECIPROCITY	Year Grad.	Per Cent
University of Buffalo School of Medicine		(1931) New York	

\*This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

†Verification of graduation in process.

## Ohio Reciprocity Report

Dr H M Platter, secretary, Ohio State Medical Board, reports 17 physicians licensed by reciprocity with other states and 3 physicians licensed by endorsement, Jan 10, 1933. The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Howard University College of Medicine		(1925)	W Virginia
Emory University School of Medicine		(1930)	Georgia
Northwestern University Medical School		(1929)	Illinois
Rush Medical College		(1929)	Illinois
Indiana University School of Medicine		(1931)	Indiana
Tulane University of Louisiana School of Medicine		(1928)	Louisiana
Baltimore Medical College		(1898)	Penna.
Boston University School of Medicine		(1925)	New Jersey
University of Michigan Medical School		(1929)	2)
(1930) (1931) Michigan			
Jefferson Medical College of Philadelphia		(1906)	Penna
(1926) New York			
University of Pennsylvania School of Medicine		(1931)	Penna
University of Virginia Department of Medicine		(1928)	W Virginia
(1931) Tennessee			
College	LICENSED BY ENDORSEMENT	Year Endorsement	Grad of
Johns Hopkins University School of Medicine		(1925)	N B M Ex.
Woman's Medical College of Pennsylvania		(1931)	N B M Ex.
University of Toronto Faculty of Medicine		(1927)	N B M Ex.

## Book Notices

Final Report of the Commission on Medical Education. Cloth. Pp 560  
New York: Commission on Medical Education Office of the Director of Study 1932

In the period of readjustment following the societal upheaval caused by the war, it was natural that questions should be raised concerning the place of medical training in the general scheme of education and the fitness of our medical schools to discharge satisfactorily their obligations to the social order. On the one hand, higher entrance requirements adopted in 1918, together with the demand of military service, had materially reduced the number of medical students. On the other, many of the physicians returning to civil life did not return to their former locations but sought to establish themselves in larger centers of population which offered greater social and financial opportunities. Altogether, the situation demanded a searching analysis of the social aspects of medical practice and of those institutions which were attempting to prepare the members of the medical profession for the service which they would be called on to perform. At the instigation of the Association of American Medical Colleges, a commission was appointed to undertake this inquiry. After seven years it has presented in this final report the results of its investigations and observations. In its findings the commission lays no claim to originality but endeavors merely to reflect and emphasize the soundest current opinion on a few of the salient principles of education.

The report deals, first of all, with the social aspects of medicine, discussing such topics as specialization, physicians' incomes, the economics of medical care, sickness insurance, industrial medicine, group practice, and hospitals. An attempt is made to appraise the need for medical service by statistics gathered from various sources showing what is actually being done for people in selected groups. Information collected regarding the supply and distribution of physicians leads to the conclusion that the United States is oversupplied to the extent of about 25,000, and that at the present rate of production, the ratio of physicians to population is still increasing.

Emphasis is laid on the necessity for advanced training through internships and postgraduate courses. Every physician must continue to be a student throughout his professional life. Both the universities and the medical profession share the responsibility for providing opportunities for the further instruction of medical graduates. Specialism is an essential part of modern practice, but the public and the profession have suffered by reason of those self-constituted specialists who lack adequate training in their respective fields. A particular identification should be established for qualified specialists obtainable only on evidence of the successful completion of a suitable course of training and on demonstration of the requisite skill. Briefer courses are also needed to enable the practitioners in smaller communities to keep in touch with the rapid advance of medical

science. The internship is coming to be generally regarded as an important stage in the preparation of the physician for his work. That this conception may be justified, it is necessary that hospital services be organized with educational objectives clearly in view.

The purpose of professional licensure, in theory at least, is to protect the public. In practice however, according to Dr Rappleye, this aim has been largely frustrated by what amounts to multiple standards of practice due to legislative recognition of the cults. The several expedients and political compromises that give legal and public recognition to sects and branches of medicine based on different educational standards are not in the interest of sound public policy. All practitioners of the healing art should be thoroughly trained, and every effort should be made to create a public opinion that will support a program of medical licensure based on a single and adequate educational requirement. The function of testing the fitness of the candidate now exercised by the state boards should in the view of the commission be transferred to the university, and a license to practice granted directly on the basis of graduation from an approved medical school.

Although the objective of medical education is a sound preparation for some form of medical practice, the standard four year course of this country cannot produce a physician. At best it can provide an opportunity for the student to obtain an elementary knowledge of the medical sciences and their application, a training in the methods and spirit of scientific inquiry, and such information as comes from association with men who exemplify the highest ideals of the profession. It is on the character of the student, his intelligence, industry and ability, that results largely depend. The aim should be, therefore, to develop in him sound habits of study and arouse an interest in the fundamental problems of medicine which will stimulate him to continue his own self-education throughout his professional career. To this end, greater responsibility is placed on the student for his own training.

The report shows that efforts are being made to correct the teaching of too many subjects in too great detail, the dependence on memory alone, the artificial separation between the medical sciences and clinical teaching, the overemphasis of specialties, and the inadequate instruction in therapeutics and preventive medicine. Greater stress is being laid on the early diagnosis and appropriate treatment of disease of insidious onset. Mental hygiene is assuming an importance commensurate with its social, medical, legal and economic implications.

In his conclusion Dr Rappleye says "The hope of democracy is in trained leadership. The medical profession is the trustee of the essential knowledge and has the personnel necessary to solve a large national problem. It will occupy its proper place in society to the extent that it provides leadership and an effective program of medical service built upon thoughtfully conceived plans of medical and postgraduate education, proper organization of the profession, and the advocacy of unselfish and courageous public and professional policies."

"Sickness affects, sooner or later, every member of society. Provision must be made to care for it, with full recognition of the technical character of the services involved, of the necessity for public education regarding the value and limitations of scientific medicine, and of the importance of creating conditions which will attract and retain the highest type of physician, dentist, nurse, and public health administrator. There is urgent need for the coordination of the efforts of the various groups and individuals in the field to the end that all may actively participate in achieving the aims of a collective policy."

The commission has made a valuable contribution in the wealth of material which it has presented in this report and also in analyzing the many factors economic and social, now influencing medical practice. It has clearly portrayed the present trends in medical education, which is conceived as a single process beginning at the time of entering college and continuing to the grave. There will be dissent from some of the recommendations in the report, as, for example, the elimination of the state examination for licensure. But, as a whole, it cannot be too highly commended for its clear cut demonstration that what the country needs is better not cheaper medical service, that the cost of such service is not excessive, though at times it may be inequitably distributed, and, of paramount importance, that the cornerstone of the entire structure of

public and private health is the individual physician, without whose personal qualifications of character intelligence, judgment and skill no scheme of medical practice, however organized, can succeed

**Medizinische Kolloidlehre** Herausgegeben von Prof. Dr. L. Lichtwitz Direktor der I. Inn. Abt. des Rudolf Virchow Krankenhauses Berlin. Dr. Dr. Raphael Ed. Liesegang und Prof. Dr. Karl Spiro Direktor des Physiologisch Chemischen Instituts der Universität Basel. Lieferung 1. Allgemeine Kolloidlehre in Beziehung zur Biologie und Pathologie. Paper. Price 5 marks. Pp. 80 with 10 illustrations. Dresden & Leipzig: Theodor Steinkopff, 1932.

An Expert-Conducted Tour for Medical Men Through the Wonderland of Colloid Chemistry' would probably be an appropriate title for this work if the other instalments live up to the promise of this one. Not that this is mental pabulum for the uninitiated. It is on the other hand, not written as exclusively for the expert as so many other books on 'colloids' are which contain such a morass of mathematics that any non-expert gets mired in it. Liesegang's introduction alone is worth the price of admission. Protoplasm is pictured as a felt-work of fine fiber-shaped colloid particles intermingled with an emulsion, kept by antagonistic influences (K vs Ca, lecithin vs cholesterol and so on) at a critical point at which change to water-in-oil or oil-in-water emulsion readily occurs. Changes in either direction as by excess of K over Ca, or vice versa, even when exerted only at the surface of the cell may give a mental picture of the nature of certain drug effects, e.g. vagotonic and sympathotonic action. Paul Meyer's chapter on colloid osmotic pressure and Ferdinand Herçik's on 'surface tension' are included in this instalment. The importance of the publication of this work lies in the growing conviction of the fruitful influence of the colloid-chemical viewpoint upon biologic physiologic and purely medical questions. Indeed the assertion has been made that real progress in the domains of pathology and therapy is chiefly to be hoped for through the physicochemical and colloid chemical point of view.

**Guide to Radiologic Diagnosis in Heart Disease** Prepared with the Aid of the Committee on Research of the Heart Committee. By Geza Nemet, M.D. Paper. Price 35 cents. Pp. 33 with 31 illustrations. New York City: New York Tuberculosis and Health Association Inc., 1931.

**Criteria for the Interpretation of Electrocardiograms** Prepared with the Aid of the Committee on Research of the Heart Committee. By Arthur C. DeGraff, M.D. Paper. Price 35 cents. Pp. 10 with 37 illustrations. New York City: New York Tuberculosis and Health Association Inc., 1931.

These two pamphlets were apparently sponsored by the Heart Committee to aid in clearing up confusion in terms and technics. The first suggests methods by which the radiologist and the clinician may meet on common ground and includes valuable diagrams to accomplish this purpose. The second attempts the same meeting place for the electrocardiographer and the clinician. Fifty key numbers are given which represent the electrocardiographic curves that are most commonly encountered. Each curve is illustrated by an example. The idea actuating both pamphlets is to extend uniformity in cardiac diagnosis.

**The Principles and Practice of Obstetrics** By Joseph B. DeLee, A.M., M.D. Professor of Obstetrics and Gynecology at the University of Chicago. Sixth edition. Cloth. Price \$12. Pp. 1163 with 1221 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

In offering this new edition of his monumental work, Dr. DeLee expresses his conviction that the general surgeon, the occasional accoucheur and the family practitioner who has to do his work in the home or in a small understaffed maternity ward of a general hospital may well be replaced by a well trained midwife. Since the vast majority of births still occur in the home, the advice given in this volume is in the main conservative. The text has been revised, new illustrations have been added, and there are references to the new literature of endocrinology and anesthesia and pregnancy tests. Consideration is taken of the great advances in the field of internal medicine. Those sections of the book in which the technic of obstetrics is concerned have also been brought up to date. The position of this volume in the field it covers is so completely established that it requires no new encomium. It remains merely to say that its author has given the best that is in him to keep his book in the high place it has for so long occupied.

**Contributions to the Medical Sciences in Honor of Dr. Emanuel Libman by His Pupils, Friends and Colleagues** In three volumes. Cloth. Price \$15 per set. Pp. 1202 with illustrations. New York: International Press, 1932.

The influence of Dr. Libman on medical men has extended into many places. His students, colleagues and associates, as represented by the contributors to these volumes, constitute a notable list. Their names and their articles reflect impressively his many interests. As is pointed out by Dr. William H. Welch in the preface, approximately one third of the papers relate to the cardiovascular system, but the others concern medical historical subjects: bacteriology, pathology and indeed the whole realm of science and the practice of medicine. It would be invidious to list particularly any of the notable names appearing in this work. Of special interest are such articles as that by Harlow Brooks on the heart of the athlete, that by Leroy Crummer on the early development of medical literature, that by Lawrason Brown on the significance of Koch to tuberculosis. Again there is a historical article by Fielding Garrison, an item by Arthur F. Hurst, entitled "On Being Liverish," and a brief paper by the famous historian Sudhoff.

Memorial volumes of this character represent a fine testimony to the person for whom they are developed, provided always, of course that the writers take seriously the assignment and prepare specifically for the purpose contributions that are not duplicated in general medical literature elsewhere. The Libman collection is notably free from the latter type and, therefore, merits a place in any library.

**Leçons cliniques sur le diabète** Par Marcel Labbé, professeur de clinique médicale à la Faculté de médecine de Paris. Paper. Price 40 francs. Pp. 333 with 36 illustrations. Paris: Masson & Cie, 1932.

This volume represents the observations and views on diabetes mellitus of one of the foremost authorities of France. The range of subject matter covers diagnosis, complications, treatment and social aspects and although the point of view is primarily clinical and practical, the theoretical aspects are briefly but adequately indicated. The style is clear and direct and the author evidences a wide knowledge of the international literature. In general the author's views on treatment are conservatively progressive and compare quite closely with those of Joslin in this country. No extreme dietary combinations of any sort are recommended, but rather the avoidance of excessive caloric intake with a moderate carbohydrate allowance. Temporary green vegetable diets are recommended as useful. This publication serves to illustrate the parallelism between the medical thought in different countries brought about by the present international distribution of medical literature.

**The Technique of Contraception: An Outline** By Eric M. Vaisner, M.D. Foreword by Robert L. Dickinson, M.D. Introduction by Foster Kennedy, M.D. Published for the American Birth Control League Inc. Paper. Price 50 cents. Pp. 38 with 52 illustrations. Baltimore: Williams & Wilkins Company, 1933.

This outline is published by the American Birth Control League. It concludes that the sheath in general shows a high degree of success and that any method involving the use of intra-uterine stems is to be avoided because of a high rate of dangerous sequelae. It points out that the method most commonly advocated involves the use of some form of mechanical barrier in conjunction with a spermicidal jelly. It is realized that the ideal contraceptive has not yet been found.

**The Practitioners Library of Medicine and Surgery** [Supervising editor: George Blumer.] Volume III: Practice of Medicine. Associate editor: Harold M. Warren, B.A., M.D. Assistant Clinical Professor of Medicine, Yale University School of Medicine. Cloth. Price \$10. Pp. 1400 with 44 illustrations. New York & London: D. Appleton & Company, 1933.

The first two volumes of this series have previously been reviewed in THE JOURNAL. The third volume is devoted to the infectious diseases: those due to parasites, to physical agents and toxic agents, to allergy and metabolism, to the diseases of digestion and respiration of the heart and the blood-forming organs and finally to the endocrine glands and the locomotor system. It is thus in its way almost a complete textbook of medicine, a volume of immense value to any practitioner. This is particularly the case since the various sections have been written by competent authorities with practical experience in

the subjects about which they write. The editorship has apparently included an order of discussion approximating the outline established by Osler. Such an outline makes reference exceedingly simple. It is not possible in the scope of this review to criticize particularly any one article. In general the articles have an evenness of development and preparation that speaks well for the planning of the book. A typographic error occurs in the heading "Acquired Aliments of the Feet," on page 1323.

**Lincoln A Psycho Biography** By L. Pierce Clark. Cloth. Price \$3.50. Pp. 570 with 9 illustrations. New York & London: Charles Scribner's Sons, 1933.

Dr. Clark presents many new side lights on the character of Lincoln. He applies the technic of modern psychoanalysis to the study of the available records. The book is well written and the use of the present tense gives it a vivacity not usually associated with historical accounts. As to the applicability of the psychoanalytic method, there may be some doubt. Whether or not one agrees with all of the author's conclusions, he has studied the evidence and he supports them by such observations. He believes that the life of Lincoln is not one of cold intellectual performance but rather one swayed by emotions and governed by a marvelous mind.

**The Practice of Birth Control. An Analysis of the Birth Control Experiences of Nine Hundred Women.** By Enid Charles M.A. Ph.D. Department of Social Biology, University of London. Cloth. Price 10s. 6d. Pp. 190. London: Williams & Norgate Ltd, 1932.

This is the record of birth control experiences of nine hundred women who tried many different methods, most of which are widely known to the medical profession throughout the world. There is a chapter on the comparison of results with those of other investigators and a chapter devoted to general conclusions. This indicates that the use of a sheath with a chemical or of a pessary with syringing is more reliable than any method or combination of methods commonly used. It is recognized that all contraceptive devices require a modicum of intelligence and initiative in use. Probably the most moron proof is the soluble chemical pessary, but the types now available are costly and are not altogether reliable. It is conceived by the investigators that there are factors at present operating to produce a falling birth rate and if allowed to continue some collective control will be necessary for the avoidance of the extinction of the human race. Obviously that time is far distant, since the biologic laws still continue to operate in the same old way in the vast majority of places throughout the world.

**A Guide to Birth Control Literature. A Selected Bibliography on the Technique of Contraception and on the Social Aspects of Birth Control.** By Norman E. Himes. Cloth. Price 3s. 6d. Pp. 46. London: Noel Douglas, 1931.

This is a selective bibliography on the technic of contraception. The periodical literature to which reference is made is not easily available, so that the book is hardly worthy of purchase by the average American physician.

**Endocrine Medicine.** By William Engelbach, M.D. F.A.C.P. B.S. Volume I. General Considerations. Volume II. The Infantile Endocrinopathies. The Juvenile Endocrinopathies. Volume III. The Adolescent Endocrinopathies. The Adult Endocrinopathies. Volume IV. Bibliography Index of Names. Index of Subjects. With a foreword by Lewellys F. Barker. Cloth. Price \$3.50 per set of 4 volumes. Pp. 460 with 138 illustrations. 473 with 214 illustrations. 862 with 366 illustrations. 117 Springfield, Ill.: Charles C. Thomas, 1932.

This is a system in four volumes covering all phases of endocrinology except diseases of the pancreas. The subject matter is based on a personal experience with 2,000 clinical cases.

The first volume gives a short history of the development of knowledge concerning the ductless glands, describes their organology and physiology and discusses the factors of heredity, the diagnostic procedures, the endocrine reactions including basal metabolism, specific reactions and blood chemistry and the relation of the endocrinopathies to general medicine. Each volume has a special chapter on the relation of diseases of the ductless glands to public health. This phase of the work is interesting and can be studied by any one with profit. Volume

II describes the infantile and juvenile and volume III the adolescent and adult endocrinopathies. The same plan is followed in these volumes, necessitating much repetition. The work represents an enormous acquaintance with the literature and an extensive experience and can therefore be resorted to for reference purposes. As recent as it is, it is already deficient in certain ways, not because of the author's neglect but because of the rapid advances that have been made in endocrinology. It would seem that a loose leaf system might correct this defect. All three volumes are profusely illustrated and contain numerous charts of standard measurements. Volume IV contains the bibliography and the index.

It is unfortunate that the untimely death of the author has prevented him from reaping the benefits that would have accrued to him through the publication of such a monumental piece of work.

**Beiträge zur Kenntnis der Narkolepsie.** Von Prof. Dr. med. et phil. Rudolf Thiele unter Mitwirkung von Priv. Doz. Dr. med. Hermann Bernhardt. Sonderausgabe von Heft 69 der Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten. Paper. Price 18 marks. Pp. 187 with 2 illustrations. Berlin: S. Karger, 1933.

This book is based on a thorough and detailed study of thirty-one patients suffering from narcolepsy. In eight instances encephalographic studies were made. While no attempt is made to review the literature, those articles which are pertinent to the discussion of isolated points are carefully cited. The authors are convinced that narcolepsy should be considered a syndrome and not a disease *sui generis*, as maintained by many writers, notably Adie. They are impressed with the value of treatment with ephedrine as recommended by Janota and by Doyle and Daniels. Throughout, there is manifested a critical but dispassionate point of view. It is to be regretted that a work containing so much data of value does not have an index.

**Men Against Death.** By Paul DeKruif. Cloth. Price \$3.50. Pp. 363 with illustrations. New York: Harcourt Brace & Company, 1932.

In this volume are collected most of the essays contributed by DeKruif to the *Country Gentleman*, the *Ladies Home Journal* and the *Forum*. The difficulty with these writings as with some previous essays is their excess in dramatization and an absolute plethora of superlatives. Those like the DeKruif of former years who work in laboratories of research and those who, unlike DeKruif, have taken care of the sick at the bedside know that superlatives are rare and in general the atmosphere is quiet. Nevertheless for the vast majority of lay readers writing that fairly burns and explodes has a great appeal. It is not surprising that the contributions of DeKruif should have done more to spread interest in the drama of medical science in its progress against disease than those of any other writer.

**Les constipations. Diagnostic et traitement d'après les conceptions actuelles.** Par M. Chiray, médecin de l'Hôpital Bichat et R. Sileff, médecin consultant à Plombières. Collection médecine et chirurgie pratiques no. 59. Avec une note historique de Jean Vinchon. Paper. Price 20 francs. Pp. 157. Paris: Masson & Cie, 1933.

The title of this book, "The Constipations," is to emphasize that there exists a variety of forms of constipation. An interesting chapter on the history of constipation by Jean Vinchon, is followed by a fairly thoroughgoing discussion on the physiology of the colon and the classification and diagnostic differentiation of the various forms of constipation. The authors favor the division into two great classes: functional constipation and 'lesional' constipation. The diagnosis, including roentgenologic criteria, and the treatment, including surgery, are taken up from a thoroughly modern point of view.

**The Long Hills.** By Frederic Brush. Cloth. Price \$2. Pp. 170. Philadelphia: Roland Swain Company, 1932.

The author is a physician, a woodsman and an athlete. His poems constitute a saga of the Alleghenies. In a series of poems he tells a story of the opening of the Alleghenies to new civilization, occasionally pausing for a brief chapter in prose and varying his verse form by many rhythms. Particularly interesting are occasional Americanisms typical of the language of the Alleghenies. For example, "She scrouched down," "he grows rampageous," "he's pastin' Danny," "this razoo is just begun." There is a story of an old fashioned wrestling match

in rhyme reminiscent of Masefield. Among the medical contributors to poetry, Dr Brush earned a place for himself by his former book "Susquehanna." "The Long Hills" shows progress in his art and technic.

## Medicolegal

**Compensation of Physicians Liability of Minor Child**—Thaddeus Goss, 6 or 7 years old, was treated by the physician-plaintiff for serious injuries resulting from an automobile accident. He recovered \$3,000 damages, which after deducting expenses, was paid to his guardian, his codefendant in this case. The child's father, T. R. Goss, recovered in his own name \$900 damages, which according to his complaint filed in the case, included hospital and medical expenses that he had incurred on account of the injury to his son. There was no express agreement by any one to pay for the services rendered. The father refused to pay, and the physician thereupon sued his patient, the minor child and his patient's guardian, the defendant bank. From a judgment for the physician, the defendants appealed to the Supreme Court of North Carolina.

The question presented on appeal, said the Supreme Court, is, "Is an infant living with his father liable for medical services where such services were uncontradicted [sic] but were necessary in an emergency and the infant recovers damages for the injuries which made the services necessary, although the father also recovers for his own expenses (including hospital and medical) and damages?" It goes without saying said the court that the father is liable to the physician for the services rendered his infant son. The defendants themselves had pleaded that "In good conscience and equity it [the amount due] ought to have been collected out of the father when he recovered his judgment in a substantial amount for this very obligation." With this suggestion, the court agreed but it pointed out that from the record before the court the father might be insolvent. Under the circumstances of the case, the court concluded that the minor child, too, was liable. In reaching this decision the Supreme Court quoted with approval *Cole v. Wagner* (N. C.), 150 S. E. 339 as follows:

It was an emergency and quick action had to be taken. During the period of treatment the father paid for no hospital medical or surgical treatment for the infant. It seems that he was either unable—at least he did not provide for the infant. The circumstances were peculiar. The father did not provide this attention necessary to save his life and usefulness the hospital did. The infant now has an estate and it is unthinkable that the guardian of the infant should not pay the reasonable expense for saving the child's life and usefulness.

In the present case, concluded the court, the physician-plaintiff rendered services in an emergency and to preserve human life and the minor child benefited thereby should be held liable to the physician for reasonable compensation for such services. The judgment in favor of the plaintiff was therefore affirmed.—*Bitting v. Goss* (N. C.) 166 S. E. 302.

**Compensation of Physicians Termination of Physician's Contract, Frequency of Visits**—The defendant casualty company authorized employers holding its indemnity policies to summon certain physicians named by it to treat injured employees. The physician-plaintiff whose name was on the casualty company's list, was so employed by an insured employer in this case, Dec. 22, 1926. The company was aware of his employment, for he made written reports to its officers, the last one dated March 5, 1927, and he claimed to have made later reports by telephone. About the middle of 1927, or in the fall of that year, the casualty company struck his name from its list of physicians whom its policyholders were authorized to employ. It said nothing, however, and did nothing to indicate that he was to discontinue attendance in this case. He therefore continued in attendance until the patient's death, during December, 1928. In May, 1928, he sent a bill to the casualty company, which the company seems to have ignored although there was no denial of the receipt of the bill by the company. After the patient's death, he sent another bill. When the company ignored that also, he brought suit. The company, by way of defense, contended that it had no knowledge that the plaintiff was in attendance on the case after March 5, 1927,

the date on which the plaintiff rendered his last written report. Practically all of the reports, however, closed with the words "Will keep you advised as to his [the patient's] progress."

If the defendant casualty company desired to terminate its liability after March 5, 1927, said the Kansas City court of appeals, Missouri, on appeal from a judgment in favor of the plaintiff, it was the duty of the company so to notify the physician and to direct him to discontinue treatment. A person who employs a physician to attend an urgent case and makes no limitation as to time is liable to the physician for all subsequent visits, until the physician's services are dispensed with. The defendant casualty company further contended that the visits claimed to have been made by the plaintiff were excessive in number. But, said the court of appeals, although the number of visits to be made by an attending physician may be limited by direction of the patient or by the employer of the physician, in the absence of any specific understanding or direction the law recognizes that the physician is the best, if not the sole, judge of the necessary frequency of his visits, and so long as the patient is in the physician's charge it will be presumed that the visits made were necessary and proper.—*Nigro v. Maryland Casualty Co.* (Mo.) 53 S. W. (2d) 414.

**Drunkenness and Contractual Capacity**—A grantor has mental capacity to make a deed if he has sufficient mind and memory to comprehend the nature and effect of his act, if he is able to understand the nature and effect of the business in which he is engaged, and if he is exercising his own will. Evidence that a grantor is addicted to the use of intoxicating liquor is competent on an issue of mental capacity to make a deed. Proof that the grantor was using liquor to excess about the time the deed was made will not be sufficient to set the deed aside, however, unless it appears that he was so intoxicated as to be incapable of understanding the transaction and of exercising his will. Neither proof of old age, eccentricity, partial impairment of mental faculties, nor of loss of temper and ungovernable fits of passion is sufficient alone to show want of mental capacity to make a deed.—*Harrington v. Travis* (Ill.) 182 N. E. 769.

**Dental Services as "Necessaries of Life"**—Under a state statute imposing on the wife liability for "necessaries of life" furnished the husband, a wife is liable for dental services rendered her husband.—*Smith v. Buntson* (Calif.), 15 P. (2d) 910.

## Society Proceedings

### COMING MEETINGS

American Medical Association Milwaukee June 12-16 Dr. Olin West  
535 North Dearborn Street, Chicago, Secretary

American Academy of Pediatrics Chicago June 12-13 Dr. Clifford G.  
Grulee 636 Church Street Evanston Ill. Secretary

American Association of Medical Milk Commissions Milwaukee, June  
12-13 Dr. Harris Moak 360 Park Place Brooklyn Secretary

American Federation of Organizations for the Hard of Hearing Chicago,  
June 18-22 Miss Betty C. Wright 1601 35th Street N.W. Washing-  
ton D. C. Secretary

American Heart Association Milwaukee June 13 Dr. Irl C. Riggan  
450 Seventh Avenue New York Executive Secretary

American Proctologic Society Chicago June 12-13 Dr. Frank G.  
Runyon 1361 Perkleman Avenue Reading Pa. Secretary

American Society of Clinical Pathologists Milwaukee June 9-12 Dr.  
A. S. Giordano, 531 North Main Street, South Bend Ind. Secretary

American Urological Association Chicago June 20-22 Dr. Gilbert J.  
Thomas 1009 Nicollet Avenue, Minneapolis, Secretary

Association for Research in Ophthalmology Milwaukee, June 13 Dr.  
Conrad Berens 35 East 70th Street New York, Secretary

Association for the Study of Allergy, Milwaukee June 12-13 Dr. Warren  
T. Vaughan 808 Professional Building Richmond Va. Secretary

Association for the Study of Internal Secretions Milwaukee June 12-13  
Dr. F. M. Pottenger 1930 Wilshire Boulevard, Los Angeles Secretary

Maine Medical Association Poland Spring June 26-28 Dr. Philip W.  
Davis 22 Arsenal Street Portland, Secretary

Medical Library Association Chicago, June 19-21 Miss Marjorie J.  
Darrach 645 Mullett Street Detroit, Secretary

Medical Women's National Association Milwaukee June 11-12 Dr. Inez  
A. Bentley 45 Gramercy Park, New York Secretary

Montana Medical Association of Anaconda July 12-13 Dr. E. G.  
Balsam Box 88 Billings Secretary

National Tuberculosis Association Toronto Canada June 26-30 Dr.  
Charles J. Hatfield Seventh and Lombard Streets, Philadelphia  
Secretary

Pacific Coast Oto-Ophthalmological Society San Francisco June 28-30.  
Dr. F. C. Cordes Fitzhugh Building San Francisco Secretary

Western Branch Society American Urological Association Vancouver  
B. C., August 3-5 Dr. George W. Hartman 999 Sutter Street San  
Francisco, Secretary

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below

### American Journal of Public Health, New York

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- Aerial Nuisances from Refining and Burning of Petroleum Oils S DeM Gage Providence R I—p 97  
Bacteriology of Intestinal Pathogens. L. C. Havens Montgomery Ala.—p 105  
Maternal Mortality Study for Cleveland Ohio. R A Bolt, Cleveland—p 109  
Motivation in Health Education. B C. Gruenberg, New York—p 114  
Psychology of Public Education. E S Robinson New Haven Conn.—p 123  
Health Aspects of Fruit Beverages W H Eddy New York—p 129  
Yeast Extract Medium for Determining Bacterial Content of Milk by Plate Method E. D. Devereux and J L. Etchells East Lansing Mich.—p 149

### American Journal of Surgery, New York

19 209-410 (Feb.) 1933

- Consideration of Malignant Prostate and Associated Obstructive Manifestations J F McCarthy and S E Kramer New York—p 209  
Clinical Course of Bladder Neck Obstructions Attributed to Sclerosis or Bar E L. Keyes, New York—p 215  
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Diothane New Local Anesthetic. C G Bandler New York—p 250  
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\*Pulmonary Diagnosis with Use of Iodized Oils H I. Goodman New York—p 254  
Epiphrenal Diverticulum of Esophagus Case Report. E. Granet New York—p 259  
Agenesis of Gallbladder Associated with Pancreatitis Report of Case. P D Amadon Monroe Mich—p 263  
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Advanced Treatment in Postoperative Ileus R. N. Smith Los Angeles—p 272  
Schilling Differential Blood Count in Appendicitis J V Luck Los Angeles—p 275  
Pathologic Physiology of Ileus as Basis for Treatment. G Stout, Los Angeles—p 283  
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Differential Diagnosis Between Acute Appendicitis and Influenzal Myalgia J J A. McMullin League Island Pa.—p 296  
\*Alcohol Injection for Prolapse of Rectum. E. B. Potter and J M Wellman Ann Arbor Mich—p 297  
Reasons for Relief of Pain in Cancer by Calcium R. J. Behan Pittsburgh—p 301  
Survey of Some Recent Investigations in Cancer Research Theoretical Basis for Acidotic Treatment of Neoplasia. Anna Goldfeder New York—p 307  
Transplantation of Gluteus Maximus Muscle Preliminary Report J D Bisgard Chicago—p 313  
Spontaneous Rupture of Uterus Pregnancy Following Previous Classic Cesarean Section. P D Acerno Union City N J—p 315  
Nephrectomy for Infected Hydronephrosis with Bacteremia Multiple Lung Complications and Fecal Fistula Report of Case with Recovery L R. Kaufman New York—p 321  
Benign and Malignant Tumors of Kidney Associated with Renal Tuberculosis J M Meredith Philadelphia—p 329  
Horseshoe Kidney Case with Four Pelvis and Ureters Excision of Half of Kidney A R. Stevens New York—p 335  
Congenital Polycystic Kidney Report of Case. J Denton Brooklyn—p 338  
The Surgeon and Anesthesia in Coiter Surgery F S Weiberell Syracuse N Y—p 342  
Experimental Eck Fistulas Instrument. L W Angle Kansas City, Kan—p 347

**Pulmonary Diagnosis with Iodized Oils**—Goodman believes that the use of iodized poppy-seed oil is indicated in the following instances (1) in pulmonary suppuration exclusive of tuberculosis, (2) in pleural suppuration of the chronic type especially complicated with fistula, (3) in lung abscesses as an aid in localization and in determining the extent of the associated

bronchiectasis, (4) to determine the efficiency of collapse therapy in nontuberculous suppuration, (5) in neoplasms of the lung and mediastinum, and (6) in tuberculosis, in which the indications are more sharply defined. Iodized poppy-seed oil should be used in tuberculous cases only when particular and definite information is desired and when other methods will not suffice. Its usefulness to determine the efficiency of collapse therapy in tuberculosis need only be mentioned to be appreciated. The lesion, of course, should be definitely fibrotic. The contraindications are (1) active pulmonary tuberculosis, (2) recent hemoptysis, (3) decreased vital capacity, (4) most cases of asthma, (5) cachectic and debilitated patients, and (6) age, which is not necessarily a contraindication. Bronchography is an essential feature of any pulmonary diagnosis. Its administration by puncture of the cricothyroid membrane by a specially devised cannula is both certain and dependable. The procedure is entirely safe.

**Pathologic Physiology of Ileus**—Stout believes that the ability of the intestinal mucosa to absorb water is impaired in ileus and that there is an increased secretion of liquids into the intestinal lumen. Ileus may be defined as a disorganization and impairment of the motor function of the gastro-intestinal tract, sometimes resulting in complete cessation of motor activity with consequent functional obstruction, with blood chemistry changes and toxemia peculiar to these. He presents the following as the fundamentals of treatment. 1 Proper preoperative preparation of the patient should be done. The use of cathartics preceding laparotomies is unnecessary and is to be deprecated. 2 The early recognition of the signs and symptoms of ileus and the immediate institution of adequate therapy is necessary. The objective and subjective symptoms of incipient ileus are nausea, vomiting and "gas pains" later than eight hours post-operatively, restlessness, gastric retention, tympanites and oliguria. 3 Patients who are apprehensive, irritable and later excitable from their toxemia should have proper sedation. Rest is imperative and may usually be provided by the use of sodium bromide as a basic sedative and the more potent barbituric acid salts as required. 4 Exhibition of chemicals known to have a specific action in inhibiting the toxic process, namely, sodium chloride and sodium bromide is required. 5 Toxic absorption from the intestine should be prevented. Provision should be made for the continuous removal of gastro-intestinal contents. 6 Adequate facilities should be provided for the control of intra-intestinal pressures. The operation of enterostomy is rarely necessary. The rectal drip does not aid in relieving distention, but it tends to maintain reverse peristalsis and its use is consequently inadvisable. 7 The physical chemistry of the body should be maintained as near normal as possible. 8 Gastro-intestinal tonicity should be improved. In this connection, solution of pituitary has been of little value. The author has used with success a hypodermic consisting of from  $\frac{1}{160}$  to  $\frac{1}{80}$  grain (0.0013 to 0.002 Gm) each of physostigmine salicylate, pilocarpine hydrochloride and strychnine sulphate. He has found this combination effective in stimulating the motor nerves of the intestine and as an aid in maintaining its tone. 9 Every effort should be made to improve the circulation in the splanchnic area. 10 Dehydration and its converse, hydremic plethora, should be prevented. It is well to remember when giving large quantities of liquids, that in the presence of fever there is a tendency toward retention of both water and chlorides by the tissues.

**Alcohol Injection for Prolapse of Rectum**—Potter and Wellman treated, over a four year period, thirteen consecutive cases of prolapse of the rectum by the submucous injection of alcohol, using the technic described by Findlay. The patients' ages varied from 1 to 13 years and the duration of the prolapse from thirteen days to four years. In most cases the prolapse involved the mucous membrane. One patient had a severe procidentia with extrusion of the sigmoid as well as exstrophy of the urinary bladder and other congenital abnormalities. The cause of the prolapse was ascertained in five of the thirteen cases, in three a marked diarrhea was responsible, in one the onset had followed typhoid and in one congenital anomalies were present. Some diarrhea had occurred in the other patients and this may have been a contributory factor in the production of the lesion. A cure was obtained in eleven patients, or 85 per cent, although several required a second injection for a satis-

factor result. One failure occurred in a child aged 7, who is now confined to an institution because of an organic brain lesion. Radical operation failed following unsuccessful injection. There was a recurrence in a child, aged 9 with a two year old prolapse only recently treated and the authors anticipate a satisfactory result with another injection. They emphasize the fact that radical operations many of them formidable procedures for use in children seem to be unjustifiable in most instances when one has at his disposal the injection method, which in the majority of cases has proved to be a safe simple and effective form of treating rectal prolapse.

### American Review of Tuberculosis, New York

27 121 216 (Feb.) 1933

- Recent Developments in Our Knowledge of Tuberculosis J. A. Myers Minneapolis—p 121  
Pulmonary Roentgenography of Small Experimental Animals S. Greenberg Ray Brook, N. Y.—p 137  
Localized Experimental Tuberculosis of Lungs R. G. Bloch Chicago—p 143  
Comparison of Pathologic Changes in Embolic Tuberculous and Pyogenic Pulmonary Abscesses Experimental Study P. H. Pierson San Francisco—p 150  
Tuberculoma of the Brain Report of Four Cases E. Scott and G. O. Graves Columbus Ohio—p 171  
So-Called Pleuropulmonary Endothelioma Report of Case A. L. Banyai Wauwato a Wis and J. Grill Milwaukee—p 193  
\*Effects of Thoracoplasty on the Heart Olga S. Hansen Minneapolis and H. W. Maly Oak Terrace Minn—p 200  
\*Dietary Treatment of Skin Tuberculosis S. Bommer Berlin Charité Germany—p 209

**Effects of Thoracoplasty on the Heart.**—Hansen and Maly state that their series of fifty-seven cases shows that the intrathoracic pathologic involvement incident to thoracoplasty almost invariably (in 87 per cent) displaces the heart more or less more frequently toward the unaffected side. The electrocardiograms also show a high incidence of postoperative changes (63 per cent). These changes were in agreement with the roentgen observations in only a third of the cases. It would seem impossible to predict the probable electrocardiographic changes from a study of the roentgenograms or, conversely, to guess the type of roentgen observations from looking at the electrocardiograms. It is probable that the electrical axis may be influenced by rotation of the heart on its longitudinal axis by fibrotic tissue affecting at times the base and at times the apex anteriorly or posteriorly, as has been shown experimentally by Meek and Wilson. It is probable that other factors such as rest in bed, toxemia and changes in weight may affect the form of the electrocardiogram since the thirty control patients who had no gross mechanical changes were also variable in their complexes. There has been no evidence of a disturbance in the conduction or of myocardial damage in the electrocardiograms. Necropsy has shown no abnormality in the weight of the heart nor more evidence of myocardial degeneration than is found in other patients dying of tuberculosis. Some of the changes in QRS amplitude probably represent changes in muscle tone associated with reduction in toxemia and increase in exercise and would appear regardless of the mechanics of collapse. The changes found in the electrocardiogram are probably due to extrinsic factors and bear no relationship to the condition of the heart muscle.

**Dietary Treatment of Skin Tuberculosis.**—Since 1928, Bommer has used the Herrmannsdorfer-Sauerbruch diet in the treatment of skin tuberculosis, in which common salt is entirely banished. Meat is restricted to a total weekly intake of from 500 to 600 Gm. Smoked meat sausage and boiled ham as well as smoked and pickled fish, are prohibited. The protein requirement is covered apart from milk, eggs and cheese by vegetable protein. The diet furnishes a generous amount of fat and is carbohydrate poor. Contrary to Voit's formula, which provides a daily intake of 118 Gm of protein 56 Gm of fat and 500 Gm. of carbohydrate, for a medium weight workman (67 Kg.), the tuberculosis diet allows about 90 Gm of protein 162 Gm of fat and 222 Gm of carbohydrate. From 45 to 50 calories daily are given for every kilogram of bodyweight. Therefore a patient having an average weight of about 60 Kg will receive from 2700 to 3000 calories daily. The author states that under the influence of this diet as the sole treatment tuberculous skin foci heal completely. He describes the clinical observations during all stages of the involution, particularly in lupus vulgaris. On the strength of his observations, the

chief action of the diet is regarded as an influence on the vascular system—the vascular wall cells. These have their normal function restored by the diet. All other curative processes are sequelae to the restoration of vascular function in the inflammatory region. In this process salt regulation, by salt withdrawal, and vitamin intake support each other in their action on the vascular wall cells. The addition of a physiologically equilibrated salt to the diet also gave successful results in lupus vulgaris. Its use materially simplifies the diet.

### Archives of Internal Medicine, Chicago

51 173-326 (Feb.) 1933

- \*Simmonds' Disease (Cachexia Hypophyseopriva) Report of Case with Postmortem Observations and Review of Literature S. Silver New York—p 175  
Experimental Edema in Nephrectomized Dogs II The Role of Water and Chlorides F. S. Barry A. L. Shafston and A. C. Ivy Chicago—p 200  
Influence of Pituitary Gland on Erythrocyte Formation R. C. Moehlig and G. S. Bates Detroit—p 207  
\*Infectious Polypoid Colitis R. M. Larsen Nashville Tenn—p 236  
Tuberculosis of Myocardium Report of Six Cases with Observations on Involvement of Coronary Arteries B. A. Gouley S. Bellet and T. M. McMillan Philadelphia—p 244  
\*Paradoxical Breathing E. Korol Lincoln Neb—p 264  
Epinephrine Its Effect on Cardiac Mechanism in Experimental Hyperthyroidism and Hypothyroidism H. Rosenblum San Francisco, and R. G. Hahn and S. A. Levine Boston—p 279  
Syndrome of Pneumococcal Bronchial Obstruction Experimental Production of Atelectasis or Lobar Pneumonia with Human Pneumonic Sputum Suggestion for Preventive and Therapeutic Treatment. P. N. Coryllos and G. L. Birnbaum New York—p 290

**Simmonds' Disease.**—Silver calls attention to a syndrome of Simmonds' disease, rarely described and, to his belief, more common than generally accepted, that is, hypofunction of the three specific cells found in the pituitary. The disease in its fully developed form is readily recognized by the association of extreme cachexia with signs and symptoms of gonadal atrophy. The onset is often consequent on a complicated labor and among the clinical features may be mentioned premature aging early and complete amenorrhea, loss of pubic and axillary hair atrophy of the lower jaw with loss of teeth, and a profound depression of the basal metabolic rate. In addition to the advanced obvious cases, attention should be directed to the mild abortive forms that masquerade under such diagnoses as arteriosclerotic cachexia, syphilitic cachexia and latent tuberculosis. Disease in the pituitary region is of great physiologic significance and much can be learned from observing closely patients presenting signs of pituitary cachexia.

**Infectious Polypoid Colitis.**—Larsen reports a case of ulcerative polypoid colitis with a typical clinical history of infectious ulcerative colitis and the roentgenologic observations of polyposis with a suspected malignant condition. This type of lesion in the colon has apparently not been described before. The polyps are composed primarily of accumulations and massive clusters of large mononuclear inflammatory cells which contain the infectious agent. The etiologic agent is a gram negative bacillary organism situated for the most part within large mononuclear leukocytes. The micro-organism has not been cultivated nor were distinctive lesions induced in animals by inoculation with infected tissue.

**Paradoxical Breathing.**—Korol states that paradoxical breathing occurs in all air-breathing vertebrates. It depends on the narrowing or closing of the glottis during certain respiratory acts and on the unequal pressure conditions prevailing in the different portions of the respiratory tract. In amphibians and birds, paradoxical breathing, like the maintenance of residual air, serves a useful function in moistening and diluting the atmospheric air. In mammals owing to the oxygenation of the blood in all portions of their lungs paradoxical breathing impairs the respiratory function by diminishing the vital capacity and by causing breathing of stale air. With an intact thoracic wall paradoxical breathing is limited to the apical and mediastinal portions of the lungs, these regions of the chest being poorly provided with muscle. In congenital and acquired defects of the chest wall, the vicarious breathing is conspicuous in the areas of the lungs adjacent to the defects. During the activities of workers such as glass blowers singers dancers and runners, paradoxical breathing produces acute emphysema (*volumen pulmonum acutum*) and materially curtails the efficiency of the performers. Paradoxical breathing

is an important factor in the development of pulmonary emphysema and is largely responsible for the dyspnea and cyanosis observed in emphysema and asthma. Paradoxical breathing, by causing an interchange of material between the lungs is a common cause of interbronchial spread of infection in tuberculosis and all other diseases of the lungs

### Archives of Pathology, Chicago

15 175 320 (Feb.) 1933

- Coccidiosis of Liver in Rabbits I Experimental Study on Excystation of Oocysts of *Eimeria Stiedae* H Smetana New York—p 175
- \*Lipoid Histiocytosis Report of Case with Diagnosis by Biopsy S H Robertson and S Warren Norfolk, Mass—p 193
- Mouse Leukemia VIII Continuity of Cell Lineage in Transmission Lines of Lymphatic Leukemia J S Potter and M N Richter New York—p 198
- \*Simple Quantitative Microcrystallographic Estimation of Phosphates in Urine E A Pribram Chicago—p 213
- Purification of Poliomylitic Virus M Schaeffer and W B Brebner St Louis—p 221
- \*Pulmonary Varix with Spontaneous Rupture and Death Report of Case G H Klinck Jr and H D Hunt Albany N Y—p 227
- Retention of Congo Red in Amyloid Disease. M A F Hardgrove Rochester Minn—p 238
- \*Tissue Reaction to Colloid and Lipoids from Human Thyroid Gland J A Ferguson Boston—p 244

**Lipoid Histiocytosis**—Robertson and Warren report a case which exemplifies the essential or primary lipoid histiocytosis wherein lipoid is deposited in an organ or localized part of the body the lymph nodes The diagnosis of lipoid histiocytosis by biopsy of a lymph node has not been reported in the literature. The diseases of Gaucher Niemann-Pick and Christian-Schüller cannot be considered here because of the absence of an enlarged spleen or liver, the fairly good general health and the negative results of roentgen examinations of the skeleton Although the lipoid elements of the blood were within normal limits in their patient as Rowland pointed out the blood serum lipoid may be either increased, normal or decreased, as the disease is probably due to a faulty storage of the lipoid.

**Estimation of Phosphates in Urine**—Pribram states that, in precipitating phosphate from solutions of the specific gravity of urine and varying in concentration from twentieth to two-hundredth molar by using an ammonium magnesium sulphate reagent, eight different forms of crystals are found, changing gradually according to the presence of certain amounts of phosphorus The form of these crystals can be used for an estimation of the amount of phosphorus in the urine (1) by using the predominant type of crystals and (2) by titrating the urine and using the crystal that predominates in the undiluted urine as an indicator in the highest dilution in which it appears The specific gravity of the urine and the presence of considerable amounts of urea and of sugar change the form of the crystals in a typical way For a quick estimation and in cases in which large series of urines are to be examined, the following rapid method may be used Five drops of the urine are placed on a slide (hanging drop slide preferable) with a capillary pipet 1 drop of the reagent (Dowd's reagent) is added with a pipet of the same caliber and mixed well when crystallization is complete (at least from five to ten minutes) a small drop of the mixture is placed on another slide covered with a cover glass and examined with the 4 mm objective The amount of phosphorus is estimated from the type of crystals present and with the aid of a special table made by the author

**Pulmonary Varix**—Klinck and Hunt describe a case of pulmonary varix in a woman, aged 46 with necropsy observations Spontaneous rupture of the varix with massive hemothorax was the cause of death There is evidence that the varix gradually increased in size and that the resulting enlargement gave rise to symptoms The rupture is believed to have occurred following progressive thinning of the wall of the varix during a prolonged period of hypertension. The authors discuss the various theories of the development of venous varices A congenital anomaly of the left pulmonary vein seems the most probable explanation of this rare condition Their case is apparently the first to be recorded in the English literature

**Tissue Reaction to Colloid and Lipoids**—According to Ferguson, colloid and lipid substances from human thyroids cause an inflammatory reaction in the subcutaneous tissue of guinea-pigs The reaction is characterized by the formation of foreign body giant cells, marked proliferation of fibroblasts and absence of necrosis The lesion in the tissue of the guinea-

pig is apparently caused by the lipoids of the injected material, and it is almost identical with the inflammatory structures, which may be tubercle-like in appearance, occasionally found on microscopic examination of human thyroids His experimental study appears to show that such inflammatory structures occurring at times in human thyroids are caused by fatty acids The fatty acids are formed in disintegrating follicles as a result of hydrolysis of the lipid content of the colloid and of the epithelium Such reactions are of considerable interest, because at times they have a striking resemblance to the lesion produced by the tubercle bacillus

### Canadian Medical Association Journal, Montreal

28 123 238 (Feb.) 1933

- \*Treatment of Pernicious Anemia by Intramuscular Administration of Liver Extract E W McHenry Toronto E S Mills Montreal and R F Farquharson Toronto—p 123
- Spontaneous Subarachnoid Hemorrhage. C K Russel Montreal—p 133
- Carbuncle of the Kidney N E Berry and J E. Nichol Kingston Ont.—p 141
- Transplantation of Lacrimal Sac in Chronic Suppurative Dacryocystitis. J A MacMillan Montreal—p 146
- Myalgia of Abdominal Wall C Hunter Winnipeg Manit.—p 157
- Observations on Significance of Cholesterol Content of Blood Plasma in Diabetes Mellitus I M Rabinowitch Montreal—p 162
- \*Functional Albuminuria H C Jamieson and J W Scott Edmonton, Alta.—p 169
- Pyelitis of Pregnancy G S Foulds Toronto—p 172
- \*Resuscitation of the New Born. W E Brown Toronto—p 175
- Abdominal Hodgkin's Disease J Feigenbaum Montreal—p 179
- Radiation Treatment of Intra Oral Cancer C W Prowd Vancouver B C.—p 182
- Causes of Persistent Discharge Following Radical Mastoid Operation J K. M Dickie Ottawa Ont.—p 184

**Treatment of Pernicious Anemia by Liver Extract**—McHenry and his associates found that liver extract prepared for intramuscular administration is safe, dependable and effective when used in adequate dosage. Administered intramuscularly, a given quantity of extract is much more potent (at least thirty times) than is the same amount given by mouth The intramuscular administration of the extract from 10 to 20 Gm of liver a day is fully as effective as the ingestion of the extract from 250 to 800 Gm of liver daily A good reticulocyte response has been obtained from the single injection of the extract from 50 Gm of liver Intramuscular liver therapy is of great value in the treatment of patients in severe relapse, to whom large doses can readily be given by this method with assurance of an early response The remission begins about a week sooner than when the extract is administered by mouth It is also useful in treating patients who refuse to continue to take sufficient amounts of liver or liver preparations by mouth The intramuscular administration of the extract from 100 Gm. of liver a week in one or two doses is probably sufficient to maintain most patients with pernicious anemia in a good state of health It is extremely important, in treatment by oral administration of liver or liver extracts, always to give a sufficient amount, no matter how much may be required, to maintain the patient in good health with no anemia and to prevent the appearance or progression of nervous lesions

**Functional Albuminuria**—Jamieson and Scott point out that albuminuria is a common condition in growing young adults Its presence has been taken too often as an evidence of chronic interstitial nephritis The tests heretofore commonly used to distinguish functional from organic albuminuria have been unsatisfactory A test as described by Jehle has been carried out by the authors on a series of thirty young persons with albuminuria. They believe that this test is the most satisfactory yet devised As evidence of the importance of a mechanical factor in functional albuminuria, lordosis and varicocele were common observations Albuminuria may exist in the absence of lordosis, possibly, as Jehle has pointed out, from pressure on the inferior vena cava by a low diaphragm

**Resuscitation of the New-Born**—Brown divides the degrees of asphyxia in the new-born into three types 1 The depressed child who breathes occasionally in gasps, resists movements of the head and the extremities, and as a rule reacts to any form of stimulation, responds usually to the spanking-tubbing technic and promptly and vigorously to inhalations of oxygen-carbon dioxide mixtures administered by a face mask 2 The asphyxiated baby, whose respiration occurs at long intervals and only following external stimulation, whose muscles

are relaxed and who offers no resistance to the opening of the mouth should immediately be examined with a laryngoscope and the pharynx aspirated. If no reflex irritation is induced by this aspiration the glottis should be intubated under direct vision and the trachea aspirated. The reflex tone of the glottis is the best indication of the child's viability. If there is no reflex spasm of the glottis the baby is dying. Such a baby demands immediate and full oxygenation and the stimulating effects of carbon dioxide. Through a tube into the trachea, oxygen-carbon dioxide mixtures must be delivered under measured pressure. Such pressure overcomes atelectasis and allows an immediate diffusion of the oxygen-carbon dioxide mixture which relieves the right heart pressure, increases the left heart circulation and throws the necessary stimulation into the depressed respiratory center.

### Indiana State Medical Assn. Journal, Indianapolis

26 51 96 (Feb. 1) 1933

- The Common Cold from Point of View of Ophthalmologist J. R. Gillum Terre Haute.—p. 51  
 Id. Otorhinolaryngologist. E. L. Lingeman Indianapolis.—p. 52  
 Id. General Practitioner W. C. Reed Bloomington.—p. 56  
 State Medicine. T. F. O'Mara Terre Haute.—p. 60  
 Transillumination Preliminary Report. E. R. Wilson Indianapolis.—p. 62  
 Office Gynecology Marie Wessels Chicago.—p. 63  
 Cost of Medical Care C. P. Emerson Indianapolis.—p. 67

### Iowa State Medical Society Journal, Des Moines

23 59 114 (Feb.) 1933

- Blood Picture and Certain Related Clinical Implications. F. H. Lamb Davenport.—p. 59  
 Future of Medical Practice Q. C. Fuller Milford.—p. 64  
 Feeding Problems Pyloric Stenosis in Infancy Anorexia in Toddler Malnutrition in the School Child. L. Sauer Evanston Ill.—p. 66  
 \*Hodgkin's Disease Report of Cases Including One with Pruritus and Pel-Ebstein Type of Relapsing Fever P. A. White and E. G. Senty Davenport.—p. 70  
 \*Hyperplasia of Thymus Gland in Infants A. E. Perley Quincy Ill.—p. 74  
 Calculous Disease of Urinary Tract F. H. Entz Waterloo.—p. 78

**Hodgkin's Disease**—White and Senty report two cases of Hodgkin's disease and state that the disease is primarily a lymphoid hyperplasia, which is gradually superseded by granulomatous changes. It has invasive, erosive and metastasizing capabilities by which any tissue in the body may become involved. Primary predominant involvement of the retro-abdominal and thoracic lymph nodes often presents a pyrexial syndrome with chills, high fever and prostration followed by periods of comparative well being. Pruritus with or without apparent skin lesions may antedate other systemic symptoms by weeks or months. Diagnosis rests on remembering this pyrexial clinical entity, roentgen disclosure of unusual masses or bone involvement, and finding a favorable gland for biopsy together with diagnostic exclusion of other diseases that suggest themselves. The blood picture is essentially normal until secondary anemia develops. Sometimes eosinophilia is present. This is suggestive especially in the presence of recurring high temperature and chills. The etiology is unknown. Roentgen treatment and general supportive measures often give symptomatic relief for a time and prolong life. All cases are fatal.

**Hyperplasia of Thymus Gland in Infants**—Perley states that the symptoms produced by hyperplasia of the thymus are disturbances of respiration such as noisy respiration, dyspnea, retraction of the intercostal spaces and cyanosis. There may be digestive disturbances, vagotonic in origin as regurgitation and symptoms of pylorospasm. There were four boys and six girls in his series of patients, with an average age of 39 months (the youngest, 18 days). Seven gave an excellent response to treatment varying from a marked regression of symptoms following irradiation to complete relief after two treatments. Three did not respond. The 18 day old infant died of intussusception eight days after the first treatment. This child had a greatly enlarged thymus and the principal symptom was marked pylorospasm producing retching and vomiting. The author concludes that the following pathologic observations should be considered and excluded before a definite diagnosis is determined: foreign bodies in the air passages, obstructive specific laryngeal and retrotracheal abscesses, adenoids, atelectasis and any other unusual collapse of soft tissue. When none of these are found one must keep in mind whooping cough, meningitis and congenital heart and recurrent laryn-

geal nerve paralysis. The latter complication may remain producing symptoms even after the thymus has been reduced. Hyperplasia is a definite entity. When symptoms of thymic pressure are present, a rapid shrinkage of the enlarged gland and a marked relief of symptoms follow irradiation.

### Journal of Pharmacology & Exper. Therap., Baltimore

47: 141 267 (Feb.) 1933

- Effect on Kidney Function of Ether, Ethylene, Ethylene and Sodium Isoamylmethyl Barbiturate (Amytal) and Ethylene and Tribrom Ethyl Alcohol R. P. Walton New Orleans.—p. 141  
 Observations on Experimental Spinal Anesthesia. E. F. Hill and A. D. MacDonald Manchester England.—p. 151  
 \*Further Observations on Gonad-Stimulating Principle of Anterior Lobe of Pituitary Body H. B. Van Dyke and Zonja Wallen Lawrence Chicago.—p. 163  
 Studies on Calcium VI Some Interrelationships of Cardiac Activities of Calcium Gluconate and Scillaren B. A. L. Lieberman Chicago.—p. 183  
 Mechanism of Salivary Secretion V. E. Henderson and M. H. Roepke Toronto Canada.—p. 193  
 Optically Active Hydrantones as Hypnotics H. Sobotka S. M. Peck and J. Kahn New York.—p. 209  
 Contribution to Pharmacology of Adonis Vernalis R. A. Hatcher and H. B. Haag New York.—p. 217  
 Effect of Therapeutic Doses of Sodium Bicarbonate on Kidneys Lynne A. Hoag C. E. Weigle H. Talamo Eleanor Marples and Katharine Woodward New York.—p. 233  
 Distribution of Thoracic Sympathetic Motor Fibers in Divisions of Heart Determined by Action of Adrenalin on Isolated Strips from Turtle's Heart. C. W. Greene and K. E. Maneval Columbia Mo.—p. 237  
 Site of Pressor Action of Dimethylguanidin Sulphate. H. Goldblatt and H. T. Karsner Cleveland.—p. 247  
 \*Piperidinopropanediol Diphenylurethane Hydrochloride New Local Anesthetic. T. H. Rider Cincinnati.—p. 255

**Gonad-Stimulating Principle of Anterior Lobe of Pituitary Body**—According to the experiments of Van Dyke and Wallen Lawrence, the gonad-stimulating principle of the pituitary body retains its activity for five months if kept at 4°C in aqueous solutions at  $pH$  3.7 to 6.4. Alkaline solutions of the hormone ( $pH$  7.5) are stable for at least two and a half months. Purified preparations in aqueous solution ( $pH$  4.9 to 5.4) are destroyed by boiling. Berkefeld filtration of aqueous solutions at either an alkaline or an acid  $pH$  does not remove the hormone. No evidence for the separation of the hormone into follicle-stimulating and luteinizing fractions was obtained. The experiments of Fevold, Hisaw and Leonard were not confirmed. In preparing pressor-free extracts the authors use powder made from acetone-dehydrated whole pituitary bodies of sheep. To  $x$  Gm. of powder they add 20  $x$  cc. of freshly standardized 0.02 normal solution of ammonium hydroxide. The mixture is then shaken occasionally and allowed to extract at room temperature for twenty-four hours. The  $pH$  of the mixture falls to between 9 and 10. Without separating the undissolved solids they lower the  $pH$  to within the range  $pH$  5.0 to 5.6 by the use of glacial acetic acid, and after equilibrium is reached at this  $pH$  the supernatant fluid is removed by centrifugation. The residue is then washed in two instalments with enough acetate buffer of appropriate  $pH$  to make the combined volume of the supernatant fluid and washings equal to 20  $x$  cc. To this solution, enough 95 per cent ethanol is added to bring the ethanol concentration to 35 per cent by volume. The precipitate is allowed to flocculate at room temperature and after settling most of the supernatant fluid is removed by decantation. The precipitate is collected by centrifugation and washed with 35 per cent ethanol. To the combined alcoholic supernatant fluid and washings more ethanol is added in a quantity sufficient to make an ethanol concentration of 70 per cent by volume. The white flocculent precipitate that forms is allowed to settle over night. The precipitate is collected and dried by repeated washings with absolute ethanol and anhydrous ether. It is further dried to constant weight in vacuo at room temperature. The yield is about 27 per cent of the weight of the original sheep powder. This powder contains the gonad-stimulating principle, free from any pressor activity. Gonad-stimulating powders obtained from the pituitary are free from manganese. Manganese in total doses of from 10 to 0.1 mg. of hydrate manganese chloride causes no precocious sexual development.

**A New Local Anesthetic.**—Rider states that diothane, the hydrochloride of piperidinopropanediol diphenylurethane, is a new local anesthetic that promises to be of great value. Its maximum toxicity as tested by rapid intravenous injection is

three times that of procaine hydrochloride, although it is less toxic than procaine hydrochloride on subcutaneous injection. The anesthetic activity on mucous membrane surfaces is more than double that of cocaine. When injected, diothane is about three times as active as procaine hydrochloride. Anesthesia with diothane is followed by a period of postoperative analgesia that appears to be unique to this compound among the available local anesthetics. Diothane solutions are nonirritating, stable and boilable. Clinical results that bear out the pharmacologic observations will be reported later.

### Southern Medical Journal, Birmingham, Ala

26: 107-210 (Feb.) 1933

- General Consideration of Blood Supply in Practice of Medicine and Surgery. M. R. Reid, Cincinnati—p. 107
- Closed Intrapleural Pneumolysis as an Adjunct to Artificial Pneumothorax Therapy of Pulmonary Tuberculosis. J. A. Moore, Asheville, N. C.—p. 116
- \*Endothelioma of Spleen. Report of Case. G. T. Caldwell, Dallas, Texas—p. 120
- Treatment of Chorea. A. A. Walker, Birmingham, Ala.—p. 125
- Nutritional Cataract in Norway Rat (*Mus Norvegicus*). W. C. Langston and P. L. Day, Little Rock, Ark.—p. 128
- Exhaustion States with Pelvic Symptoms. W. O. Johnson, Louisville, Ky.—p. 129
- Treatment of Malignant Epithelial New Growths of Urinary Bladder. C. F. Burnam, Baltimore—p. 136
- Arterial Hypertension. Study of Three Hundred and Twenty Seven Patients Observed for Five to Ten Years. L. Rice, San Antonio, Texas—p. 144
- Some Clinical Aspects of Corneal Microscopy. Kate Savage Zerfoss, Nashville, Tenn.—p. 150
- \*Progressive Pseudohypertrophic Muscular Dystrophy. A. F. Voshell, Baltimore—p. 156
- Syphilitic Radiculitis. O. C. Hansen, Pruss, Durham, N. C.—p. 166
- Acute Hemorrhagic Meningo-Encephalitis. J. E. Hirsh, Birmingham, Ala.—p. 170
- Menace of Common Cold. A. J. Waring, Savannah, Ga.—p. 176
- Obligations and Responsibilities of Surgeon. J. M. T. Finney, Baltimore—p. 180
- The Scrotum. C. B. Taylor, Oklahoma City—p. 187
- Economic Problems of Private Roentgenologists. J. C. Dickinson, Tampa, Fla.—p. 191
- \*Treatment of Vincent's Tonsillitis with Copper Sulphate and Sodium Perborate. L. C. McHenry, Oklahoma City—p. 193
- Development of a Staff. W. F. Draper, Richmond, Va.—p. 196
- Significance of Extrinsic Influences on Behavior of Gastro-Intestinal Tract. L. W. Roe, Mobile, Ala.—p. 198
- Differential Clinical Sign of Appendicitis. G. E. Thompson, Inman, S. C.—p. 200
- New Instrument for Draining Crypts of Morgagni. J. H. Dodson, Mobile, Ala.—p. 201
- Stones in the Ureter. A. L. Atwood, Birmingham, Ala.—p. 201

**Endothelioma of Spleen**—Caldwell reports a case of a massive primary malignant neoplasm of the spleen which is apparently of reticulo-endothelial origin. Metastases were abundant in lymph nodes, lungs and subcutaneous tissues together with numerous peritoneal implantations. The liver was free of metastases except for a single nodule in its capsule. The tumor was of the large round cell type, with a tendency toward alveolar arrangement but without any definite angio-plastic structure. Delicate argyrophil fibrils seemed to be formed by the tumor cells in the more differentiated portions of the tumor, but they were almost completely lacking in the more cellular areas. The tumor is considered to be a primary reticulo-endothelioma of the spleen.

### Progressive Pseudohypertrophic Muscular Dystrophy

—In treating sixteen patients presenting progressive pseudohypertrophic muscular dystrophy, Voshell gave 1,529 doses of pilocarpine and epinephrine, 190 doses of glycine (glycocol) alone, and 115 doses of the two administered simultaneously. From thirty to sixty doses were required before any changes were noted. The pilocarpine and epinephrine method of treatment is simply the subcutaneous injection of from 0.2 to 0.3 cc. of 1:1,000 epinephrine hydrochloride and from 0.1 to 0.2 cc. of a 1 per cent solution of pilocarpine hydrochloride daily or every other day, up to sixty doses without interruption. The glycine method is to feed the patient a daily quantity of 5 Gm. of glycine for eight periods of three months each, three weeks intervening between the periods. The author obtained better results with the pilocarpine and epinephrine method. No large series has been treated with glycine so that its value is still to be tested although the cases shifted from pilocarpine and epinephrine to glycine showed decided retardation signs. The idea that the combined method might offer better advantages by giving the muscles more food (glycine)

to replace the lost creatine and by stimulating their autonomic nerve supply with pilocarpine and epinephrine has not as yet proved anything either way. It is probable that studies of the phosphocreatine metabolism will present some better preparation, which will act on a sounder physiologic basis. The fact that some patients have been apparently improved and some held stationary is at least worth while and gives a basis for the continued use of the method clinically with the hope that refinements will be forthcoming. The patient should not be put to bed for any cause, unless it is absolutely necessary, as the stimulation of muscle activity is essential to the retention of a minimum of function. The patient rapidly retrogresses under rest.

**Treatment of Vincent's Tonsillitis**—It is McHenry's custom to consider a diagnosis of Vincent's infection of the tonsil confirmed when the lesions respond within twenty-four hours to treatment with copper sulphate and sodium perborate. When they do not respond he resorts to smears, cultures and dark field examinations. If the history and clinical examination suggest diphtheria or syphilis or an acute pyogenic or streptococcal infection, he uses the microscope and the culture tube. To justify this procedure the author collected his last forty cases of Vincent's tonsillitis and studied them in regard to history, clinical appearance and response to treatment. The average amount of time required for the relief of symptoms was two days. Eleven patients were relieved of symptoms in one day, and one required four days before local relief was obtained. The average amount of time required for the disappearance of local swelling was 24 days. Complete disappearance of the membrane was achieved in the average time of 46 days. Four patients required only two treatments each, four had seven treatments each, and one had ten treatments. There were nine recorded recurrences in six patients. In employing this procedure in Vincent's tonsillitis the author removes the necrotic debris and the membrane, which separates easily, by a mild alkaline spray and gentle wiping with a cotton-tipped applicator. He applies a 10 per cent aqueous solution of copper sulphate to all ulcerated surfaces. This should reach the depths of all pockets and infected crypts. This procedure is repeated every day until the signs of acute inflammation have disappeared and every second day until the membrane has disappeared completely. The patient is given a prescription for sodium perborate and instructed to use one-half teaspoonful in half a glass of warm water as a gargle and mouth wash every two hours.

### Texas State Journal of Medicine, Fort Worth

28: 657-732 (Feb.) 1933

- \*Arteriolar Changes in Essential Hypertension. Preliminary Report. J. F. Pilcher and E. H. Schwab, Galveston—p. 665
- Diagnosis of Coronary Sclerosis. D. Neighbors, Fort Worth—p. 669
- Atroventricular Heart Block. Its Etiology, Prognosis and Treatment. C. W. Barrier and S. E. Stout, Fort Worth—p. 675
- \*Purulent Pericarditis. M. A. Walker, Paris—p. 679
- \*Chest Surgery with Reference to Thoracoplasty. A. Axelrod, Houston—p. 683
- Thoracic Decompression. Report of Case. J. W. Nixon, San Antonio—p. 685
- Resumé of Coster. W. E. Schulkey, San Angelo—p. 687
- Practical Roentgen Ray Aids in Fracture Treatment. B. M. Works, Brownsville—p. 690
- \*Retroposed Uterus. W. L. Crosthwait, Waco—p. 692
- Results of Reinhardt's Reinjection Method in Aschheim-Zondek Test for Pregnancy. Martha A. Wood, Houston—p. 694
- External Migration of Ova. R. C. Brookes, Waco—p. 696
- Relative Value of Homatropine and Atropine as Cycloplegic in Children. F. H. Newton and M. Thomas, Dallas—p. 697
- Future of Practice of Otolaryngology and Ophthalmology. E. H. Cary, Dallas—p. 699
- Erysipeloid of Rosenbach. A. G. Schoch, Dallas—p. 704
- The Integration of Curative with Preventive Medicine. E. O. Chmura, Austin—p. 706
- City Health Department and Its Part in Disease Prevention. A. H. Flicker, Fort Worth—p. 711

**Arteriolar Changes in Essential Hypertension**—Pilcher and Schwab studied fifteen cases of hypertension with complete necropsy protocols. All subjects were Negroes with one exception, a factor which merits consideration in view of the fact that in the Negro hypertensive disease tends to run a more rapid and fulminating course than in the white race. There were twelve men and three women. The ages varied from 21 to 71 years with an average of 45.7 years. In the fifteen cases examined, a decrease in the wall to lumen ratio was

found in each instance involving every tissue with the exception of the myocardium. The exact nature of the lesion producing the disturbance of the wall to lumen ratio varied in the different tissues. The average ratio of the wall to the lumen in the kidney was 1:1.13. The predominant pathologic changes were those of degeneration, fibrosis and hyalinization. Degenerative and fibrotic changes were only rarely seen in the liver although the wall to lumen ratio was uniformly altered the average being 1:1.08. The increased thickness of the vessel walls was practically always due to muscle hypertrophy evidenced by a considerable increase in the number of muscle nuclei. The arterioles in the pancreas showed significant changes in all but two cases the average wall to lumen ratio being 1:1.14. Here sclerotic and hypertrophic changes participated equally as a cause of thickening of the vessel walls. The greatest disturbance of the wall to lumen ratio was observed in the spleen 1:0.74. In the control cases the ratio was 1:1.29 an observation which justifies the conclusion that hypertension produces changes in the arterioles of the spleen, just as it does in other organs. The average wall to lumen ratio in the myocardium was within normal limits, 1:2.04. Four cases in the series showed a slight disturbance of the ratio ranging from 1:1.31 to 1:1.63 which in comparison to the other tissues was rather an insignificant change.

**Purulent Pericarditis**—Walker states that pericarditis with effusion, serous or purulent is a complication that occurs more frequently than has been generally thought. He feels sure that he must have had more than his two cases one of which he reports of serous and purulent pericarditis in his practice that he failed to diagnose. A more painstaking observation should be made in the daily examination of patients particularly those ill with pneumonia and rheumatism children acutely ill with scarlet fever and still more especially those with empyema of the pleura, and the rheumatic patient who becomes suddenly critically ill. If an effusion is diagnosed and it is serous it can be aspirated. The point of puncture should be in the fifth interspace about  $1\frac{1}{2}$  inches to the left of the sternum. After the needle has penetrated the chest wall, its base should be depressed so that the point remains near the chest wall and is less likely to injure the heart. If purulent effusion is diagnosed pericardotomy should be done with resection of the sixth costal cartilage. Nothing would be gained by aspiration and damage might possibly be done to the heart with the needle. A local anesthetic is to be preferred. It is said that ether and pus make a lethal cocktail in proportion to the amount of ether used and the amount of pus present. This is especially true when the pus is in the chest.

**Thoracoplasty**—Avelrod points out that all great statistics of operative treatment in tuberculosis of the lung are practically the same: one third healed, one third improved and one third failures. These equalities prove that the principle of the operation is correct and also that small technical variations are not important but that the most important factor is to be found in the compression of the lung. He believes that the indications for thoracoplasty are (1) in severe unilateral especially productive cirrhotic, cavernous tuberculosis if no considerable improvement can be obtained by any other therapy (2) when pneumothorax treatment is impossible in medium severe progressive, more or less unilateral at the most subfebrile partly caseous lobular tuberculosis (3) if pneumothorax is incomplete because of adhesions partial thoracoplasty may be done above the adherent part of the lung (4) in all pneumothorax empyemas and (5) in repeated hemoptysis when pneumothorax is impossible and phrenicotomy is unsuccessful. The contraindications are in widespread disease of the other lung, lung diseases with high fever, lobular tuberculous pneumonia, chronic nontuberculous changes of the other side, decompensated myocardial heart diseases, severe tuberculous infection of the kidney, bones and intestine, nephritides and nephroses, diabetes and in patients under 18 years of age and over 40, when the duration of the tuberculous process is longer than five years and when clubbing of the fingers is present as a sign of chronic intoxication.

**Retrodisplaced Uterus**—Crosthwait believes that a considerable range of motion, especially backward, may be considered within the range of normality when considering the retrodisplaced uterus. Any disease or condition that holds the

uterus fixed in any one position must be considered pathologic. Any operative procedure that fixes the uterus immovably in any one position is unsurgical, fundamentally wrong and detrimental to the future welfare of the patient. Any operation or technic potential of causing intestinal obstruction, such as the old ventral fixation should be abandoned. If the round and broad ligaments are used to elevate and maintain the retrodisplaced uterus a technic must be used which will not interfere with the blood and nerve supply of the ligaments and contiguous parts. In an operation for the correction of the retrodisplaced uterus, the symptoms for which the patient seeks surgery should be relieved the uterus must not be fixed immovably in any one position and the possibility of post-operative intestinal obstruction must be obviated. A procedure that interferes with or perverts the physiologic functions or disturbs the normal anatomic relationship of the uterus and its adnexa must be regarded as unsurgical and inadequate.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

41 65 118 (Feb.) 1933

Surgical Treatment of Osteomyelitis of Skull A. W. Adson Rochester Minn.—p. 65

Hyperparathyroidism G. Thomason Los Angeles and L. Smith San Bernardino Calif.—p. 78

Homotransplant of Parathyroid Preliminary Report of Case of Tetany of Four and One Half Years Duration F. J. Tainter St. Louis—p. 83

\*Suppurative Pericarditis Description of Case in Which Drainage Was Made Through New Approach G. Cottam Minneapolis—p. 86

Fatal Hemolytic Crisis One Year Following Splenectomy for Splenic Anemia C. G. Toland Los Angeles—p. 91

Surgical Management of Acute Appendicitis with Perforation L. G. Bowers and A. T. Bowers Dayton Ohio—p. 96

\*Bandl's Contraction Ring V. E. Dudman Portland Ore.—p. 101

**Suppurative Pericarditis**—Cottam believes that, in draining the pericardium, the requirements are best met by removal of a section of the right fifth costal cartilage incision into the underlying pericardium and insertion of a long piece of flexible rubber tubing between the heart and the pericardial wall obliquely upward and to the left posteriorly. He gives a report of a patient in whom he used this method. The most comfortable position the patient assumed was when lying on his right side and then the flow was directly downward. The sepsis gradually abated without exacerbations. The cardiac function improved from the start. The patient recovered completely. Suppurative pericarditis, being always secondary to some other serious disease is in itself always a serious problem. The hazard is increased by the impossibility of early diagnosis and the fact that many diagnoses are overlooked even in larger effusions. The death rate is high. The treatment is purely a matter of adequate surgical drainage with the least interference and the utmost conservation of a desperately ill patient's resources. No drainage can be considered adequate if it does not provide for the evacuation of the deeper recesses of the pericardium. This is best accomplished by a right-sided approach, preferably through the fifth costal cartilage fairly close to the sternum. Through this the internal mammary vessels may be tied, the pleura displaced outward and the pericardium back of the heart easily reached with a tube, through which dependent drainage can be secured with slight change of posture.

**Bandl's Contraction Ring**—Dudman points out that early rupture of the membranes is an etiologic factor in Bandl's contraction ring though early rupture commonly is secondary to disproportion or malposition. Prolonged labor particularly in elderly primiparas, labor in the neurotic type of patient, and stimulation of the first stage of labor by urging the patient to employ effort during the first stage, or by administration of solution of pituitary have all been noted as etiologic factors. The location of the ring in the order of its frequency is around the neck, 45 per cent, the body, 21 per cent, the arm 15 per cent, the thorax, 9 per cent, and the neck of the after coming head, 9 per cent. It is important to conduct the average case of dystocia in such a manner as to avoid a contraction ring. The frequent occurrence of the condition is evidence of failure to apprehend the causation. Relaxing drugs with the exception of epinephrine and possibly amyl nitrite are of little value. Early recognition, with the employment of cesarean section is a desirable treatment and may serve to avert the undesirable procedure of embryotomy.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Medical Journal, London

1 257 300 (Feb 18) 1933

- Forethought in Midwifery W H F Oxley—p 257  
Choice of Anesthetic for Abdominal Surgery A J Walton—p 260  
Some Aspects of Natural Resistance of Body to Bacterial Diseases J Gordon—p 263  
Some Early Ocular Symptoms of Overindulgence in Sugar and Sweet Farnaceous Food A M Ramsay—p 266  
Glucose Tolerance in Rheumatoid Arthritis J W Shackle and W S C Copeman—p 268  
Fatal Staphylococcal Septicemia with Pseudomoxoma Peritonei Octavia Wilberforce—p 269

## Edinburgh Medical Journal

40 57 112 (Feb) 1933

- Carcinoma in Mammary Lobule and Its Origin E. K. Dawson—p 57  
Series of Tumors of Nervous System Classified According to Modern Methods Mary Gilmour—p 83

## Guy's Hospital Reports, London

83 1128 (Jan) 1933

- \*Gastric Secretion in Simple Achlorhydric and Allied Anemias. S J Hartfall and L J Wits—p 3  
Intrinsic Factor of Castle in Simple Achlorhydric Anemia S J Hartfall and L J Wits—p 24  
Secretion of Gastric Juice in Response to Histamine in Addisonian Anemia S J Hartfall—p 37  
Addison's Anemia with Subacute Combined Degeneration of Spinal Cord and Normal Gastric Secretion Following Chronic Obstruction of the Ileum Case A F Hurst—p 47  
Some Features of Hodgkin's Disease. E T Conybeare—p 53  
\*Bronchial Infection in Asthma P A Knott and J W Thornton—p 63  
\*Investigations on Skin Reactions of Asthmatics R S B Pearson—p 86  
Incidence of Asthma in Port Sudan with Especial Reference to Influence of Molds D Ellis—p 102  
Acute Idiopathic Epididymo-Orchitis W H Bowen—p 112  
A Curious Epigastric Murmur Associated with Portal Obstruction G A M Lintott—p 118  
Achlorhydria and Dysentery. Observations on Test Meals of One Hundred Postdysenteric Cases F E. Camps—p 123

## Gastric Secretion in Achlorhydric and Allied Anemias

—Hartfall and Wits report the results of fractional test meals in 137 women with idiopathic microcytic anemia, and of histamine tests in 39 of these cases. Apparent achlorhydria or extreme hypochlorhydria was present in nearly 80 per cent of the cases and true achlorhydria in more than 50 per cent. The achlorhydria is not the result of the anemia. The possible etiologic factors in achlorhydria in the order of their importance are heredity, the action of hematogenous toxic agents on the stomach operative or other trauma to the stomach and gastritis from direct irritation of the stomach. In a significant number of the authors' cases the gastric secretion was deficient in total chlorides and contained no free hydrochloric acid and little or no pepsin. It was indistinguishable by ordinary tests from the gastric secretion in pernicious anemia. Nevertheless it is unusual for these women to develop pernicious anemia.

**Bronchial Infection in Asthma**—Knott and Thornton discuss the occurrence and nature of the bacterial infections occurring within the bronchioles of 333 asthmatic patients. Out of the total of 333 cases 208, or 61 per cent showed noninfected, strongly eosinophilic sputum and gave a history of allergy either in themselves or in their families. 120 or 37.5 per cent showed bronchial infection but they also had quite obvious eosinophilic concentration in their infected bronchial plugs as well as a clear cut history of allergy in themselves or in their relations, and five or 1.5 per cent had sputum with plugs showing a heavy bacillary infection which produced a positive histamine like response, but no eosinophilia, no positive cutaneous reaction to any allergens and no personal history of hypersensitiveness could be obtained. The authors suggest that in view of the relative rarity in asthmatic patients of any demonstrable true sensitization to bacterial proteins the effect of bronchial infection is produced mainly by direct stimulation of the bronchial muscle by substances similar to those present in bacillary cultures. They describe methods for detecting the organisms involved together with the characters of the sputum containing them. From an analysis of their patients' case records it is shown that 1 These bronchial infections have a definite seasonal incidence

during the summer months and persons suffering from asthma are somewhat more likely to show infection than those not affected. 2 Juveniles are much less likely than adults to show bronchial infection, this being apparent in all types of infection. 3 Foci of infection not infrequently may be found in the nose containing organisms of the type capable of producing histamine-like substances. The authors emphasize the importance of eradicating such foci in asthmatic patients.

**Skin Reactions of Asthmatic Patients**—Pearson carried out an investigation in a series of fifty asthmatic patients and fifty normal controls in order to determine the immediate dermal responses to urinary 'proteose' and in the event of obtaining positive reactions to correlate them with dermal responses to peptone, histamine and protein, and to determine the clinical significance of the observations. He found that 1 Asthmatic patients tend to give nonspecific skin reactions with solutions of protein or protein derivatives containing from 10 to 20 mg of nitrogen per hundred cubic centimeters. This tendency was present in a much smaller degree in the healthy control group. 2 After allowance was made for this tendency patients suffering from asthma gave significant reactions to their own urinary proteose in 38 per cent of the cases. In 24 per cent reactions occurred to the 1:100,000 solution containing from 0.1 to 0.2 mg per hundred cubic centimeters. 3 If the asthmatic series is subdivided into those cases showing specific reactions to individual protein substances (foods or inhalants) and those in which no protein sensitiveness was demonstrated, the former group gives significant reactions in 50 per cent of the cases to their own proteose whereas the latter gives 15 per cent of positive reactions. 4 The control series being similarly tested with their own proteose only 2 per cent gave significant reactions to their own proteose in the 1:1000 solution. 5 Solutions of asthmatic proteose produced significant reactions in 32 per cent of the control subjects. 16 per cent reacted to the 1:100,000 solution and one half of these had allergic family histories. 6 The dermal response to histamine is remarkably constant in normal and asthmatic persons. 7 The skin reactions to proteose are not due to histamine. The evidence is in favor of the reaction being due to some unidentified toxic substance. The possibility of allergic individuals being actually sensitized to such a toxic substance has not been definitely disproved.

## Indian Medical Gazette, Calcutta

68 61 124 (Feb) 1933

- Case of "Abnormal Blood Group in Which Transfusion Was Performed" R B Lloyd and S N Chandra—p 61  
Diet as Possible Factor in the Causation of Stone in Bladder in the Punjab J Megaw—p 64  
Cytologic Studies of Blood and Tissues in Kala Azar and Associated Conditions. Part IV. Large Mononuclear Cells in Monkey Malaria. K V Krishnan C Lal and L E Napier—p 66  
Id. Part V. Large Mononuclear Cells in Peripheral and in Spleen Blood in Kala Azar. L E Napier K V Krishnan and C Lal—p 75  
\*Therapeutic Value of Thiosarmin in Treatment of Syphilis A Denham White U Brahmachari and B B Maity—p 80  
Antigenic Power of Antidysenteric Bivalent Vaccine as Demonstrated by Serologic Method P Seguin—p 83

**Sulpharsphenamine in Treatment of Syphilis**—Denham White and his associates made a comparative study of the value of sulpharsphenamine in the treatment of syphilis by using sulpharsphenamine, sulpharsphenamine and metallic bismuth, neosarsphenamine, neosarsphenamine and metallic bismuth, neosarsphenamine and disodium hydroxymercursalicyloylacetate, arsphenamine and dextrose and sodium bismuth thioglycollate. They observed that sulpharsphenamine is a most efficacious drug in the treatment of syphilis and its manifestations and is better tolerated than any other arsphenamine compounds. The largest number of cases showing a negative Wassermann reaction after treatment was noted in the case of sulpharsphenamine. Among the clinical advantages noted by the authors in cases treated with sulpharsphenamine are absence of reaction, no rise in temperature, absence of pain, no nitritoid crises, no anaphylactic conditions and heretofore no arsenical dermatitis. The drug may be regarded as one of the most innocuous at present in use, its lack of toxicity being most marked in comparison with its high efficacy. It appears to be most suitable for both hospital and private use. The rapidity with which symptoms disappear compares favorably with that obtained by other preparations. The authors experience in

their hospital is that the ordinary Indian female patient is intolerant of neocarsphenamine in doses of more than 0.45 Gm., and it is their practice never to exceed this. The usual onset of dermatitis when it occurs, is after the fourth injection or if the dose of 0.45 Gm. has been exceeded. With sulpharsphenamine the maximum dose has been up to 0.6 Gm. without the slightest untoward effect. It is to be remembered that the dosage of the arsenical compounds, such as neocarsphenamine has been based on the physical characteristics of the European and it is now known that Indian women cannot tolerate a dose well borne by European women. This does not, however, seem to apply in the case of sulpharsphenamine. No instance has been observed in which the Indian woman has shown intolerance even for the higher doses. It therefore appears clinically that it is of a comparatively low toxicity.

### Journal of Laryngology and Otology, Edinburgh

48: 77-144 (Feb.) 1933

Report of Committee for Consideration of Hearing Tests F. W. Warkyn Thomas, A. L. Yates and J. Dundas Grant.—p. 77

### Lancet, London

1 345-398 (Feb. 18) 1933

Prognosis and Treatment of Lobar Pneumonia. J. A. Ryle.—p. 345

\*Recurrent Pyogenic Parotitis: Its Pathology, Diagnosis and Treatment. R. T. Payne.—p. 348

Selective Lung Collapse in Bilateral Disease. J. Gravesen.—p. 354

\*Treatment of Tuberculous Cavities of Lung. L. S. T. Burrell.—p. 356

**Recurrent Pyogenic Parotitis**—Payne has studied nineteen cases of recurrent pyogenic parotitis. It is characterized by recurrent swellings of one or both parotids even at times in the more chronic cases involving the other salivary glands. In some of the author's patients the commencement of parotitis dates from an acute dental infection, a severe tonsillitis or a sinus infection. At times beginning the use of dentures or neglect to keep these adequately cleaned has been responsible. The accurate diagnosis of recurrent pyogenic parotitis depends on a careful history and a thorough examination of all the salivary glands, their ducts and their orifices. A catheter specimen of saliva should be collected from the affected gland (it is not always possible to do this in the case of the submaxillary glands), and this should be examined for its cytology, bacteriology and ptyalin content. Roentgenograms of the affected region should then be taken, which in the case of the submaxillary gland should include both intra-oral and extra-oral films, to exclude the presence of a calculus and finally sialography should be performed, when practicable, to determine the site and severity of the pathologic lesions of the ducts and to serve as a guide to treatment. Mumps stone, Mikulicz's disease, uveoparotitic polyneuritis, preauricular lymphadenitis, mixed parotid tumor and malignant disease of the parotid are conditions that should be differentiated from recurrent parotitis. The first principle of treatment is to keep the ducts of the parotid patent and to keep the region of the duct orifice in the mouth as free from infection as possible. Any obvious cause of sepsis in the mouth particularly in the region of the affected parotid duct should be dealt with especially infected teeth. Massage of the parotid is by far the most important single item in the line of treatment. If duct obstruction can be avoided, one can certainly say that the development of recurrent attacks of parotitis will also be avoided. By means of iodized poppy-seed oil injections of grossly diseased parotids it is possible to empty the main duct and its branches after even a few seconds' massage of the gland. Patients should be instructed to carry out prophylactic massage of the parotid. The juice of half a lemon in a little water will cause an intense flow of saliva, removing any possible stagnation caused during the night. This should be done immediately after massage. Operation is rarely necessary, but it may be indicated when the condition is severe or when it has failed to respond to other treatment carried out efficiently. It may consist in (1) dilation of the parotid duct, (2) slitting the orifice of the parotid duct, followed by dilation or (3) avulsion of the auriculotemporal nerve. During the actual exacerbation of the disease there is always either complete or partial obstruction of some portion of the duct system often the main duct. Immediate treatment thus consists in the relief of obstruction and is identical with that which should be under-

taken from the outset in any case of acute pyogenic parotitis, whether recurrent or not.

**Treatment of Tuberculous Cavities of Lung**—Burrell states that a tuberculous cavity in the lung is a potential danger and its treatment is not without danger. Consequently, the patient should not be exposed to a treatment that is more dangerous than the cavity. The annular shadow often shown by radioscopic examination of tuberculous lungs is probably due to a cavity in the majority of cases. In the absence of any symptoms or signs other than those of radioscopia, this type of cavity is not an indication for any special treatment. A dry cavity in a chronic fibrotic case is best treated by the same means as a chronic fibrotic case without cavity. Attempts to close the cavity by pneumothorax or thoracoplasty are usually unsuccessful and often shorten the life of the patient. When a cavity is accompanied by much expectoration, special treatment is indicated, because the disease is likely to spread and the prognosis is bad. Artificial pneumothorax should be tried first and adhesions divided if necessary. Failing this, phrenic avulsion and thoracoplasty or apicolysis may be tried, but if these methods are contraindicated the lung should be rested by the application of sandbags to the chest wall. Apicolysis is more successful than a partial thoracoplasty. In the acute case with cavity formation, artificial pneumothorax is the best treatment. Failing this, the lung should be rested by sandbags. Phrenic avulsion and thoracoplasty are contra-indicated.

### Medical Journal of Australia, Sydney

1 171-206 (Feb. 11) 1933

Observations on Treatment of Esophageal Cancer. G. Halloran.—p. 173

Kinked Back and Strained Muscles. E. Pockley.—p. 179

Distribution of Radon Seeds Around Circumference of Circle. W. H. Love.—p. 180

John White, Surgeon General to First Fleet. D. Anderson.—p. 183

1 207-236 (Feb. 18) 1933

\*Hypoglycemia: Survey and Account of Twenty Five Cases. C. Sippe and J. Bostock.—p. 207

Some Useful Tests in Diagnosis of Common Clinical Conditions. Ethel Byrne and Ruby Beveridge.—p. 218

**Hypoglycemia**—Sippe and Bostock believe that, in the study of cases of hypoglycemia, it is important to perform a dextrose tolerance test in preference to a single fasting dextrose test. The reason for this statement was borne out in several of their patients in whom there was a normal fasting dextrose but a low figure at the end of from one and a half to two hours. The most feasible explanation of this phenomenon is that the patient's nervous tension is naturally increased and the fear mechanism brought into play. Hypoglycemia, with its attendant train of symptoms, is to be regarded in the light of a metabolic disturbance due to many causes. Just as pyrexia alone is often treated with advantage to the patient, so does the treatment of hypoglycemia alone aid in improving the patient's well being. A short course of dextrose medication may be sufficient to alter the situation by breaking those widespread vicious circles which create such a vivid and varied symptomatology in both acute and chronic disease. In the majority of patients a careful search will reveal other defects that need systematic attention. In the cases described by the authors are included a number of somatic disturbances, including endocrine maladjustment. Septic foci should be attended to, and a regular action of the bowels obtained. Half an ounce of dextrose may be given alone or in an orangeade usually a night and morning dose is sufficient, but in some cases an extra dose may be given during the day. Barley sugar or boiled sweets are just as effective and are preferred by most patients, especially children, the usual amount being from 3 to 4 ounces daily. It is of advantage to encourage the patient to eat between meals. In cases of acidosis it is necessary to restrict fats, especially butter, and to allow eggs only in small numbers. The authors stress the fact that hypoglycemia is a condition and not a disease.

### South African Medical Journal, Cape Town

7: 69-100 (Feb. 11) 1933

Amputations and Artificial Limbs with Demonstration of Cases at the Government Artificial Limb Factory. D. Horwich.—p. 71

General Practitioner in Prevention of Malaria. C. G. Booker and S. Annecke.—p. 79

**Presse Médicale**

41: 561 576 (April 8) 1933

- Local Passive Immunity A. Desredka—p 561  
Spinal Anesthesia with Nupercaine Technic of Quarella A. Basset.—p 563  
\*Gravidic Endometrioma of Abdominal Wall J F Martin L Michon and H. Pigeaud—p 565

**Gravidic Endometrioma of Abdominal Wall**—Martin and his associates report a case of gravidic endometrioma. In a woman, aged 37, who had undergone a cesarean section eight years before, they discovered in the course of a new pregnancy a parietal tumor which was a fistulized endometrioma. The biopsy of the tumor totally extirpated in a second cesarean section, confirmed the diagnosis of endometrioma of the abdominal wall. It exhibited a marked and diffuse decidual reaction. The authors think that what appears to be a uterine fistula is frequently a fistulized endometrioma of the abdominal wall. The presence of decidual cells in a tumor located in the cicatrix of a laparotomy is the result of a pregnancy in evolution and is an argument in favor of the sexual origin of endometriomas.

**Revue de Chirurgie, Paris**

52: 239 312 (April) 1933

- Experimental Study of Division of Odder's Sphincter P. Mallet-Guy L. Auger and P. Croizat—p 239  
\*Osteomyelitis of Scapula A. Guibal and J. Montagne—p 268  
Osteogenic Sarcoma Treated by Roentgen Therapy C. Guibert and A. Tardieu—p 302

**Osteomyelitis of Scapula**—Guibal and Montagne think that the difficulties of diagnosing acute hematogenous microbic infection of the scapula result from the complex anatomy of this bone. In studying the development, form and topography of the scapula, one is struck by its multipolar ossification, ten dispersed centers of ossification spreading over its surface, its complex conformation, projections, partitions and ledges outlining fossas and cavities which completed by bands of muscle, layers of fascia or capsular envelopments lead in various directions and its multiple connections, which converge on the cervical, dorsal, thoracoparietal, axillary and scapulohumeral regions. From these characteristics arise the multiplicity and dispersion of the centers of osteomyelitis, the canalization of the suppuration originating in the ossification centers, and the clinical manifestation of the inflammation at the level of the bordering regions. Osteomyelitis of the scapula may manifest itself under the aspect of a supraspinous inflammatory focus spreading toward the neck, an infraspinous focus spreading toward the back, a subscapular focus extending toward the thoracic wall, an articular focus invading the scapulohumeral articulation or an axillary focus involving the axillary cavity, finally, the inflammation may infiltrate the entire region of the shoulder if the osteomyelitis is multipolar or total. It is important to know these misleading manifestations, when suspecting scapular osteomyelitis, in order to choose the appropriate route of access to the osseous lesion.

**Archiv für klinische Chirurgie, Berlin**

174: 583 784 (April 4) 1933

- Contraction of Transplanted Fascia Experimental Study G. Tschmarpe—p 583  
Bacteriology of Accidental Wounds A. Dumitza and H. Gutscher—p 629  
Gonorrheal Strumitis O. Schurch and H. Gutscher—p 638  
Gas-Containing Goiter As Well As Contribution to Knowledge of Tuberculous Goiter O. Winterstein—p 643  
\*Postoperative Reaction in Hyperthyroidism. H. Rahm—p 651  
Studies of Postoperative Amino N Curve in Hyperthyroidism W. Krehl—p 662  
Damage to Knee Joint Result of Continuous Traction in Fractures of Thigh Effect of Semiflexed Position on Musculature and Joint with Proximal and Distal Traction F. Felsenreich—p 667  
Contribution to Pathologic Anatomy of Tuberculous Spondylitis M. Mandelstamm—p 685  
Contribution to Knowledge of Volvulus. A. Grudnev—p 712  
Treatment of Results of Corrosion of Stomach G. S. Tunik—p 723  
\*Treatment of Patellar Fractures and Posttraumatic Arthritis Deformans R. Friedrich—p 747  
Influence of Nervous System on Healing of Wounds of Striated Muscle A. A. Wassiljeff—p 769

**Postoperative Reaction in Hyperthyroidism**—The older conception that the postoperative reaction in thyrotoxic patients was caused by the introduction of unusually large amounts of thyrotoxic products into the circulation found support in the fact that the pulse and the basal metabolic rate were increased

in these patients. Rahm calls attention to the fact that Bier and Roman found in the blood of such patients a lowering of iodine and of other thyroid components. This suggests that the opposite cause may be responsible for the reaction, namely, a sudden deprivation of all thyroid secretion. The author studied basal metabolic rates in forty patients after operation in order to throw further light on its relation to specifically thyrotoxic reaction. He found that the basal metabolic rate rose in all twenty-three cases of thyrotoxicosis, the average rise amounting to 16 per cent. In twelve patients operated on for simple goiter, an average rise of 20.5 per cent was shown. The same observations were recorded for patients who were operated on for conditions having nothing to do with the thyroid gland, the average rise amounting to 16 per cent. These rises in the basal metabolic rate corresponded accurately with the postoperative rises of temperature. The author concludes that the rise in metabolic rate is not due to a postoperative hyperthyroidism. In his material the rise in thyrotoxic patients was somewhat lower than in other conditions, suggesting that possibly the preoperative treatment with iodine desensitized the patients.

**Treatment of Patellar Fractures and Posttraumatic Arthritis Deformans**—Friedrich compares the results obtained in the treatment of patellar fractures with separation of fragments during the period up to 1923 with those obtained since that period. While conservative treatment was given preference up to 1923, most of the fractures in the latter group were treated surgically. In the majority of the cases, circlage of the patella was the operation of choice. A follow-up study of seventeen conservatively treated fractures of the patella with separation of fragments and of forty patients operated on revealed that normal function of the knee joint was obtained in 60 per cent of the former and 90 per cent of the latter. An ideal functional result was obtained in more than 50 per cent of compound fractures of the patella all of which were treated surgically. Operative treatment yielded a bony union three times as often as did the conservative method. Factors favoring the development of arthritis deformans after a patellar fracture are trauma, effusion of blood into the joint, prolonged immobilization of the joint and improper healing of the fracture. The condition developed twice as often in conservatively treated patients.

**Beiträge zur klinischen Chirurgie, Berlin**

157: 337-448 (April 12) 1933

- \*Question of Henle-Albee Operation in Tuberculous Spondylitis K. H. Bauer and B. Jenner—p 337  
Late Results with Lawen's Method of Chiseling Away of Femoral Condyles in Treatment of Acute Knee Joint Suppurations. K. H. Erb—p 351  
Circumscribed Area of Rarefaction in Lateral Portion of Os Sacrum Without Pathologic Observations T. Bársony—p 359  
\*Changes in Blood and in Water Content in Experimental Ileus of Dogs K. Brandes—p 364  
Etiology of Genuine Megaduodenum W. Nell—p 401  
Technic of Suture of Smaller Arteries O. Voss—p 414  
Pathology of Twins with Especial Consideration of Surgical Orthopedic Conditions K. E. Herlyn—p 421

**Henle-Albee Operation in Tuberculous Spondylitis**—Bauer and Jenner present an analysis of eighty-four cases of tuberculous spondylitis treated at the Göttingen clinic by the Henle-Albee operation. The aim of the study was to determine the end-results as seen in the roentgenogram and the question of deformity as well as of ultimate cure. The patients were followed up for from six to sixteen years. The authors state that the operation can be considered only in cases in which the outlook for a cure under conservative management is quite good. They point out that the operation does not remove the diseased focus, that a certain amount of damage to the focus is unavoidable, and that the operation cannot prevent deformity of the diseased adjacent vertebrae. The late results are, if anything, somewhat inferior to those obtained by the conservative management in cases of the same age and of the same gravity. In their opinion, the operation has failed to meet its indications. It has not been performed in their clinic in the last six years.

**Changes in Blood and in Water Content in Experimental Ileus**—In his animal experiments, Brandes found that morphine-ether narcosis produces concentration of the blood analogous to that produced by hunger and thirst in experimental ileus. He found that the severity of the course in high intestinal obstruction and the corresponding blood concentration depended on the degree of damage to the intestinal wall and on the rate

of absorption from the obstructed intestine. When the venous circulation of the intestine was interfered with the course was less rapid. It thus appeared as if the severity of the course and the death of the animal depended on the absorption of some toxic material from the obstructed intestine. This in the author's opinion lends further support to the intoxication theory of death in high intestinal obstruction. It was also found that the less shock accompanying the course, the more capable were the tissues of compensating for the loss of water and of chlorides. Next to the loss of chlorides that of water appeared to be more important than the rise of albumin content in the blood. The author regards the latter as the result of loss of water. He suggests that the loss of chlorides and of water is to be made up before the operation by the intravenous administration of hypertonic salt solution say from 20 to 30 cc of a 10 per cent solution of sodium chloride and by subcutaneous administration of physiologic solution of sodium chloride. Red cell count and hemoglobin determination offer quick information as to the state of concentration of the blood and the degree of damage done to the circulation.

### Deutsche Zeitschrift für Chirurgie, Berlin

239 369 504 (March 2) 1933

Postoperative Reaction of Circulation Especially After Laparotomy  
K. H. Schmidt—p. 369

\*Surgical Treatment of Icterus Simplex. H. von Haberer—p. 417

\*Early and Late Results of Removal of Injured Spleen. H. Bremer—p. 433

Results in Infants After Ramstedt Operation. G. Calmich and R. Zenker—p. 444

\*Treatment of Esophageal Carcinoma by Plummer's Method of Dilation. E. Dehne—p. 453

Peritonitis of Renal Origin. O. Kapel—p. 462

Clinical Aspects of Teratomas of Cecocolic Region. H. Niewiesch—p. 481

**Icterus Simplex.**—Von Haberer points out that simple icterus, ordinarily treated with success by the internist, may assume a severe form with acute or subacute liver atrophy. Such cases suggest an obstructive lesion by a tumor or a gallstone and are accompanied by symptoms of severe cholangitis. In this type of cases, biliary drainage in its simplest form by cholecystostomy, brings about a cure. The author suggests that this treatment be combined with a continuous intravenous drop infusion of dextrose and insulin and some dehydrocholic acid. In the severest forms of this condition, one finds white bile in otherwise normal and patent extrahepatic biliary tracts. Even patients operated on in a state of coma may still be saved if secretion of bile sets in after the operation. Of the seventeen patients operated on by the author sixteen have recovered. One patient had a genuine recurrence of the sickness but recovered with medical treatment. The operative method is suggested for severe cases in which in spite of the medical treatment failure of liver function is imminent. The operative results thus far have been encouraging.

**Results of Removal of Injured Spleen.**—Bremer reports eleven cases of traumatic rupture of the spleen observed in Haberer's clinic (Cologne) during the last sixteen years. In only one case could the hemorrhage be controlled by suture of the splenic capsule, and the spleen had to be removed in ten cases. Of these, six were observed for periods of from one to sixteen years. The author points out the high incidence of postoperative pulmonary complications, such as pneumonia and bronchopneumonia. Anomalies of the blood picture were found in practically all of the cases. They exhibited neutrophil leukocytosis, monocytosis or eosinophilia. Two cases showed high hemoglobin and a high red blood count, one approaching clinically the picture of polycythemia but yielding to treatment with splenic extract. One healthy female patient developed a bilateral tuberculous involvement of the lungs several months after splenectomy. This gave the impression that the loss of the spleen was responsible for her loss of resistance. The frequent postoperative pulmonary complications observed may be attributed to the same cause.

**Esophageal Carcinoma.**—Dehne calls attention to English statistics according to which there were 15,909 fatal cases of esophageal carcinoma between the years 1911 and 1920. Of all the cases of carcinoma, 9.7 per cent occur in the esophagus, placing it next in frequency after carcinoma of the stomach, the female genitalia and the intestine. Investigation of 300 cases by Broders at the Mayo Clinic disclosed that 90 per cent

of these belonged to a highly malignant, rapidly progressive type. The rapid progression of the growth and the high operative mortality (92 per cent of F. Thorek's material) make it appear that the palliative treatment directed toward the relief of dysphagia has more to offer than the radical operation. The author considers Plummer's method of dilation by a sound threaded over a swallowed silk thread superior to all other methods. The results obtained are likewise superior to those obtained by a gastrostomy. The author treated nineteen patients by the method with gratifying results. He had no immediate mortality from it. Vinson's immediate mortality with 504 patients amounted to 0.6 per cent. Improvement in deglutition after a single treatment persisted for from ten days to five months. The average duration of life amounted to seven and seven-tenths months. On the basis of Vinson's and his own experience, the author concludes that this is the safest of all methods of dilation, since it obviates perforation. It is valuable for differentiation of cardiospasm and of esophageal diverticulum. The stenosis can be overcome to a greater degree than with other methods. It requires no hospitalization and no especial training. It makes possible a bioscopy without recourse to the somewhat dangerous esophagoscopy for small amounts of tumor tissue sufficient for histologic examination can be recovered by the passage of the sound.

### Klinische Wochenschrift, Berlin

12: 489 528 (April 1) 1933

Forces Active in Resorption from Intestine. F. Verzar—p. 489

\*Action of Injectable Liver Extracts on Cholesterol and Cholesterol Ester in Blood. F. Gebhardt and J. Klein—p. 494

\*Influence of Thyroxine on Erythropoiesis. K. Dambé—p. 497

Changes in Human Electrocardiogram in Circumscribed Lesions of Cardiac Muscle. E. Flaum—p. 498

\*Significance of Heterophile Antibody Reaction for Diagnosis of Infectious Mononucleosis. N. Rosenthal and G. Wenkebach—p. 499

Local Immunization Manifestations in Gonorrhea Cutaneous Reaction. C. Engel and H. Grundmann—p. 503

Hypophyseal Tumor and Hormone Elimination. Question of Production of Gonadotropic Hormone in Hypophysis. E. Fels—p. 504

Problem of Direct and Indirect Action of Chemotherapy. Role of Phagocytes in Chemotherapeutic Action. P. L. Rubinstein—p. 506

Thyrotest by Urine Injection in Rabbits. H. Nielsen—p. 508

Action of Garlic on Experimental Calcification of Arteries. W. Silber—p. 509

Garlic Oil in Experimental Calcification of Arteries. G. Orzechowski—p. 509

Relief Pictures of Gastric Mucous Membrane by Means of Inflation with Air. C. Nordwig—p. 509

Clinical Contribution to Pathology of Blood Coagulation. O. Fürth and R. Scholl—p. 511

**Action of Injectable Liver Extracts on Blood.**—In nineteen patients with pernicious and secondary anemia, or with diseases of the liver or of the biliary passages and in persons without clinically demonstrable changes of the blood-forming apparatus and of the liver, Gebhardt and Klein observed that parenteral administration of liver extracts was always followed by a noticeable increase of the cholesterol and of the cholesterol ester contents of the serum. The cholesterol values were determined partly by gravimetry and partly by colorimetry. As far as the influence on cholesterol is concerned, injectable liver preparations do not differ from fresh liver or from enterally administered liver extracts. The authors consider a hormonal modification of the liver metabolism the cause of the increase in cholesterol content.

**Influence of Thyroxine on Erythropoiesis.**—Dambé points out that the blood picture of patients with exophthalmic goiter shows changes indicating an increased activity of the bone marrow, and he cites hematologists who are convinced that the endocrine glands, particularly the thyroid, play an important part in maintaining the physiologic equilibrium between the various links of the hematopoietic system. The fact that Unverricht had obtained favorable results with thyroid extract in anemias concurring with hypofunction of the thyroid induced the author to study the influence of thyroxine on erythropoiesis in a number of patients with anemia. He obtained favorable results in three patients with severe pernicious anemia. He found that thyroxine reduces the latent period before the liver extracts become effective and that stimulation of the bone marrow by thyroxine makes liver therapy efficient even in cases that are refractory to liver therapy. The action of thyroxine depends on the presence of a bone marrow still capable of regeneration, and for this reason it is not possible to influence anemias in the course of severe

leukemias or of carcinomas. The author recommends thyroxine as a valuable adjuvant in cases of anemia in which the latent period before the action of the liver extracts should be shortened, and also in anemias refractory to liver arsenic or iron therapy in which stimulation of the bone marrow by thyroxine favors a more rapid action of these remedies.

**Antibody Reaction in Infectious Mononucleosis**—Rosenthal and Wenkebach review the hematologic characteristics of lymphocytic angina, monocytic angina and infectious mononucleosis and describe the standard symptoms of infectious mononucleosis as well as the deviations from the typical course. Twenty-eight case histories illustrate that the symptomatology of various disorders may closely resemble the symptomatology of infectious mononucleosis. In cases in which the characteristic symptoms and hematologic changes are absent, the heterophile antibody reaction, which was introduced for the diagnosis of infectious mononucleosis by Paul and Bunnell is the only method that makes an exact diagnosis possible. The only other condition in which the heterophile antibody reaction has been observed is serum disease, and consequently the reaction can be recommended as an aid in the diagnosis of infectious mononucleosis. Investigations are now being conducted to determine why two such different diseases give the same positive reaction. The heterophile antibody reaction demonstrates that infectious mononucleosis is a disease entity differing from lymphocytic angina, monocytic angina and glandular fever.

### Medizinische Klinik, Berlin

29 445-478 (March 31) 1933

- \*Myoma and Pregnancy with Remarks on Treatment of Pyemia and on Interruption of Pregnancy. O. von Franque—p. 445
- \*Relation of Chromophil Cells of Hypophysis to Carbohydrate, Fat and Cholesterol Metabolism. E. J. Kraus—p. 449
- Free Diet in Diabetes of Adults. G. von Lebinski—p. 452
- Forced Feeding and Reducing Cures in Pulmonary Tuberculosis. H. Bodmer and P. Kallós—p. 453
- Pernicious Anemia and Diabetes. Margot Lewin—p. 455
- Invisible Rays of Organisms. W. Stempel—p. 456

**Myoma and Pregnancy. Treatment of Pyemia and Interruption of Pregnancy**—Von Franque reports the clinical history of a woman aged 41, in whom pregnancy was complicated by a painful tumor of the uterus. On the basis of former observations the tumor was thought to be a necrotic or an infected myoma. The operation revealed a necrotic myoma and a fetus deformed by compression. Although in the reported case an operative intervention was necessary, the author emphasizes that the pregnancy can be brought to term in the majority of cases of myomatosis of the uterus. Only serious manifestations justify an intervention during pregnancy and it should be directed against the myomas and not against the pregnancy. Interruption of pregnancy by way of the vagina is never advisable in myomatosis, because older statistics record mortality rates up to 41 per cent largely the result of retention and disintegration of remnants of ovum and of spreading of the infection to the myomas. The author relates two case histories. One case shows that even spontaneous abortion involves great dangers in myomatosis of the uterus and the other case is a typical example as to how near death a woman with myoma may come as the result of an induced abortion. The author's observations on pyemia prove that the uterus itself may be the focus of pyemia and that the veins are not necessarily involved, and he therefore considers Martens' demand for ligation of the veins too radical because many unnecessary interventions would be made if it were generally adopted. He shows that pyemia may even be cured without a surgical intervention and he thinks that the strengthening of the organism, so that it may combat the infection, is generally better than the early operation according to Martens. In discussing the methods of interruption of pregnancy he states that evacuation following simple dilation is best in the early stages, but, after the fourth month he recommends anterior uterocolpotomy, the so-called small cesarean section.

**Chromophil Cells of Hypophysis and Carbohydrate, Fat and Cholesterol Metabolism**—The fact that acromegaly, now generally considered the result of eosinophil hyperpituitarism, concurs in more than 30 per cent of cases with diabetes mellitus led Kraus to assume functional relations between the hypophysis and sugar metabolism, and he investigated this problem in a large number of young patients with diabetes. In a great per-

centage of the cases he noted a decrease in the average weight of the hypophysis and also a decrease and a reduction in size of the eosinophil cells. The antagonism between the anterior lobe of the hypophysis and the insular apparatus of the pancreas which he assumed on the basis of his systematic morphologic studies on human subjects was corroborated several years later by experimental and clinical studies. These studies do not indicate what type of cells of the anterior hypophysis produce the substance antagonistic to insulin, but in view of the conditions in acromegaly and in diabetes mellitus the author thinks that the eosinophil cells are the ones that influence the carbohydrate metabolism. He advances evidence indicating that the basophil cells of the anterior hypophysis are related to the fat and cholesterol metabolisms. In this connection he discusses Cushing's pituitary basophilism and points out that the concurrence of basophil adenomas of the hypophysis with obesity, sexual dystrophy and increase of the blood pressure is not accidental but that close genetic relations exist between these conditions. He cites Reiss and Langendorf who observed a considerable increase of the blood cholesterol in rabbits and dogs following administration of the sex hormone of the anterior hypophysis. Since this hormone is produced by the basophil cells, it may be concluded that this type of cells is of importance not only for the sexual sphere but also for the cholesterol metabolism.

### Monatsschrift für Kinderheilkunde, Berlin

57 321-400 (April 1) 1933

- Question of Phenobarbital Reaction. H. Fleisch—p. 321
- \*Treatment of Pleural Empyema in Childhood. Rosemarie Brann—p. 326
- Conservative or Operative Treatment of Pleural Empyemas of Children. F. Klages—p. 334
- Experimental Rickets in Rats. G. Meyer zu Horste—p. 342
- Respiration Equivalent in Children in Fasting Condition and After Receiving Nourishment. E. Puschel—p. 349
- \*Influence of Brine Baths on Protein and Mineral Metabolism. H. E. Meyer—p. 355
- Pneumonia in Nurslings. F. Stork—p. 372
- Chlorine Intake and Chlorine Depot Function in Nurslings. Chlorine Regulation of Liver in Young Growing Organisms. G. Török and A. Kállo—p. 386

**Pleural Empyema in Childhood**—Brann reports experiences with 125 cases of pleural empyema in children (not including tuberculous cases), with special emphasis on therapy. While small empyemas, such as interlobar ones, received the customary conservative treatment, extensive empyemas in nurslings were treated by repeated aspirations. In children of more than 1 year of age, aspirations were repeated at intervals until the thickening of the secretion or the formation of fibrin clots made them useless or until it was seen that the treatment did not lead to the goal. During this period of not less than one week and not more than two, the acute manifestations recede, the bacteria lose their virulence, and fibrinous infiltrations and adhesions fix the position of the organs so that, when the pleural cavity is opened, mediastinal fluttering and circulatory disturbances can scarcely occur. Following this preparatory treatment, resection of the ribs was performed under local anesthesia with closed drainage. Respiration exercises against resistance were started soon after the intervention and were continued after treatment of the wound was concluded. The average duration of treatment was six and one-half weeks. Of sixty-four children operated on according to this method, including three nurslings, 89.1 per cent were cured and 10.9 per cent died. Significant deformities of the thorax and spinal column were not observed in the children in whom late examinations were made. These results encourage the indication for rib resection, after preparatory aspirations, even in nurslings.

**Influence of Brine Baths on Metabolism**—Meyer studied the effect of warm water, sodium chloride and brine baths on the mineral metabolism of six healthy children between the ages of 3 and 10, in two of them protein metabolism also was studied. By exact quantitative determinations of the proteins and minerals administered to each child during the test period and of the proteins and minerals contained in each specimen of urine and feces, the quantity of each substance retained was established. The protein metabolism was not changed by warm water baths while sodium chloride and brine baths increased the daily elimination of nitrogen. The sulphur metabolism was in a large measure parallel with that of protein. Only one of three cases exhibited a greater sulphur retention during the

influence of brine baths than in the preceding days despite increased protein decomposition. Phosphorus metabolism was not affected by warm water baths or by sodium chloride baths. During the influence of brine baths one of three children eliminated an increased amount of phosphorus while the other two retained it in greater degree. A regular dependence of the phosphorus metabolism on the protein metabolism could not be distinguished. The calcium metabolism also was unchanged by warm water baths. Sodium chloride baths in one case were without effect, in another case they increased the calcium elimination, and in a third case the retention was increased. Under the influence of brine baths there was in one case an increased calcium elimination, and in two cases an increased retention of calcium. The proportion of retained calcium to retained phosphorus was practically unaltered under the influence of warm water and sodium chloride baths. When brine baths were given, the proportion was altered in favor of the calcium.

### Munchener medizinische Wochenschrift, Munich

80 483 518 (March 31) 1933

- Intestinal Stenoses and Intestinal Colics, Constipation and Water Exchange. L. Heidenhain.—p. 483  
Interference as Explanation of Therapeutic Action. G. Tavares.—p. 486  
\*Clinical Observations in Tumor Relapses. A. Bittorf.—p. 490  
Removal of Parathyroids in Spondylarthritis Ancylopoietica. W. Hoffmeister.—p. 491  
\*Salt Free Diet and Its Clinical Indications. F. Robert.—p. 492  
Fever and Problem of Combating It. E. Grafe.—p. 494  
New Hemoglobinometer Without Comparative Standard. W. Thiel.—p. 499  
Definition of Causal Relationship in Medicine and in Law. B. Mueller.—p. 500

**Tumor Relapses**—Bittorf reports two observations of late recurrence of malignant tumors after apparent cure. In the first case a melanoma appeared in the liver of a woman, aged 80, twenty-five years after removal of a melanocarcinoma of the eye. The senile involution of the liver was probably the cause of the proliferation of the tumor cells till then restricted in their growth by natural forces of resistance. The author thinks that all cases of late metastases must be explained by the action of a defensive mechanism. In the second case eight years after radical operation of a carcinoma of the breast, a tumor of the hilus and a subcutaneous nodular exanthem appeared in addition to a pleuritis. The diagnosis was carcinomatous metastases. Six months of rest, overfeeding and high altitude sunlight treatment caused a complete disappearance of the tumor and exanthem as well as of the pleuritis, but several months later typical mammary carcinomatous metastases appeared in the oral mucosa, and further metastases caused death. In this case, the general therapy so strengthened the patient's resistance weakened by the pleuritis (possibly at first nonspecific), that the body was able to overcome the attack of carcinoma temporarily. This shows the advisability of employing all possible methods of increasing the natural resistance of the body as soon as possible after removal of the primary tumor, so that the fight against metastatic cells may be started early.

**Salt Free Diet**—Robert has achieved unusually good results with the salt free diet as prescribed by Volhard in a variety of diseases. This diet demands not only the omission of salt from foods prepared in the home but the use of unsalted bread and the omission of all milk preparations except diluted cream, smoked and pickled meat and so on, so that not more than 1 Gm of sodium chloride is secreted in the urine daily. Salt substitutes with organic anions and sodium, potassium, calcium and magnesium cations may be used. While its action is not fully understood, a salt free diet has a dehydrating effect, which reduces the blood pressure by decreasing the quantity of blood and of tissue fluids. The sodium ion has a water fixing and the potassium and calcium ions a dehydrating effect. These two electrolytes are especially abundant in a diet rich in fruit and vegetables. The aim of the salt free diet is thus a demineralization and transmineralization. Foremost among indications for this diet is cardiac insufficiency, of which three cases are reported. Another indication is cirrhosis of the liver. It is indicated in essential hypertension because it effects the greatest decrease in the total body fluids and puts the least burden on the heart, in nephrosis to reduce the edema, in diabetes insipidus

to relieve the polydipsia, and in certain cases of subacute and chronic nephritis. It is contraindicated in acute hemorrhagic nephritis. It has been used in angina pectoris and in epilepsy, especially in children. To achieve a permanent success with this diet it must be continued for a long time, but, as a rigid salt free diet if protracted too long may cause a uremia a little salt may be permitted from time to time. After an interval of a salt containing diet, a salyrgan injection should be given.

### Wiener klinische Wochenschrift, Vienna

46 385 416 (March 31) 1933

- \*New Concepts of Aleukemic Diseases of Lymphatic System and Formation of Specific Granuloma. C. Sternberg.—p. 385  
Encephalopathia Alcoholica. Lauretta Bender and P. Schilder.—p. 388  
Coagulation Band of Weltmann and Its Place in Clinic. A. Schneiderbauer.—p. 390  
Injuries Caused by Sport Apparatus in Skiing. I. G. Knoefach.—p. 393  
Tonsillectomy in Diabetic Patients. R. Singer.—p. 396  
Exophthalmic Goiter and Pregnancy. Case Report. L. Elek.—p. 400  
\*Modern Dietetics of Cardiac and Renal Diseases. H. Elias.—p. 400  
\*Spleno-megaly in Childhood. H. Lehn-dorff.—p. 401  
Consent to Wed in Syphilis. H. Planer.—p. 402

**Aleukemic Diseases of Lymphatic System and Specific Granuloma**—Sternberg says that in the last ten years there have been described under the name of reticulo-endotheliosis a number of cases of enlargement of the lymph nodes, tumors of the spleen and swelling of the liver which on a histologic basis, could not be classified with any of the well known groups of aleukemic diseases of the lymphatic system, namely, lymphosarcomatosis, lymphogranulomatosis and aleukemic lymphadenosis. From a study of these cases of so-called reticulo-endotheliosis he concludes that, with the exclusion of the genuine blastomas and the proliferations of reticular cells induced by storage of fat or lipoids, most if not all cases represent acute or chronic inflammatory processes localized primarily in the lymphatic system and accompanied by the formation of nodular granulomas, diffuse development of granulation tissue, or extensive hyperplasia of the reticular cells. This brings up the question why in these cases under the influence of inflammatory noxa probably of bacterial origin, granulomas of specific structure develop. The fundamental identity between the structure of granulomas developing around foreign bodies (silk thread, hair paraffin drop) and specific granulomas makes him think that the development of the specific granulomas must be attributed to the foreign body action of pathogenic bacteria of decreased virulence. In the course of a chronic infection the body, after acquiring a certain degree of immunity, can so weaken the toxic substances of certain pathogenic bacteria that they act on the surroundings essentially as foreign bodies. This explains the allergy of which the development of granulomas is considered a manifestation. The different formations exhibited by granulomas, which are specific for the etiologic agent, are determined by the different chemical compositions of the latter. This conception may also explain the cases of granulomatosis of the lymphatic system described as reticulo-endothelioses which, while similar to lymphogranulomatosis, exhibit differences in tissue reaction indicating the action of different etiologic agents.

**Modern Dietetics of Cardiac and Renal Therapy**—Elias says that modern dietetic therapy in circulatory and renal diseases is based on the principles that the protein intake may not be reduced below a certain minimum higher with a predominantly fat diet and lower with a predominantly carbohydrate diet, without endangering the body proteins and that an increase or decrease in body weight can be achieved by control of the calories administered in the food. In severe circulatory disturbances with dyspnea, intense cyanosis and general edema, a two to three day fast is suggested to bring about dehydration. Rest in bed is required during the fast, and a few cups of black coffee or cognac may be permitted. A pap diet is then administered for a few days followed by a few days of vegetable diet poor in salt. After this, sufficient quantities of protein must be administered in the form of Gerson's or Hermannsdorfer's diet also low in salt content. With improving condition the patient may gradually return to a normal diet containing not too much meat or fluid and little salt, and including one or two strict vegetable days each week. In hypertension, also, a reduction of protein, salts and fats in the diet is advised. In acute nephritis, treatment must begin with a few days of fast. This combats the edema

of the tissues, the hypertension with hydremia and possible circulatory weakness, and the eclamptic as well as azotemic uremia. After the fast, treatment may be similar to that of circulatory disturbances. In chronic nephritis, a sufficient quantity of meat should be administered and rigid restriction on salt intake is not necessary. In the final stage of nephritis, protein intake must be reduced again to lower the dangerously high rest-nitrogen. The fluid intake must be low enough to prevent edema but high enough to enable the weakened kidney to secrete enough waste matter.

**Splenomegalies in Childhood**—Lehndorff states that swellings of the spleen in early childhood are frequent because the lymphatic tissue reacts with intense hyperplasia to all sorts of irritations. Diagnostic difficulties arise only when clinical signs of an organic disease are absent. Enlargement is not identical with disease. Gas inflation, epinephrine injection, possibly a pneumoperitoneum may be of diagnostic value. Roentgenography with a contrast medium is inadvisable. Puncture of the spleen is permitted only in case of large hard tumors if leukemic and thrombopenic conditions have been ruled out. Nonspecific splenic enlargement is found in exudative diathesis and lymphatism. Many diseases with splenic enlargement have a characteristic blood picture. Splenic tumor plays no part in polycythemia which is of the Vaquez type in children usually it is of familial occurrence with endocrine disturbances and so on, splenomegaly with simple hypochromic anemia is frequent but of little significance if occurring alone. The chlorotic anemias of nurslings are often accompanied by a moderate splenomegaly. A number of the diseases with splenomegaly are characterized by erythroblastic anemia. The spleen is very large in all forms of hemolytic anemia. Splenomegaly may be the first sign of myelosis. In lymphatic leukemia swelling of the lymph nodes is rarely lacking. Lymphogranulomatosis may involve only the spleen and the diagnosis is based on the type of fever, on leukocytosis and on the diazoreaction. Among infectious diseases splenomegaly may play an important part in the splenic form of glandular fever, infectious mononucleosis, measles, syphilis and malaria. The spleen is enlarged in splenic insufficiency with eosinophilia. Chronic thrombosis of the splenic vein is diagnosed by the variable size of the spleen and disappearance of the tumor after a hemorrhage. Gaucher's and Niemann-Pick's diseases have marked splenomegaly, and their diagnosis is made by histologic and chemical examination of material obtained by puncture.

### Zentralblatt für Chirurgie, Leipzig

60 913 992 (April 22) 1933

- Unilateral Kidney Disease Manifested as Ileus. W. Ropke—p 914  
Recognition and Treatment of Chronic Osteomyelitic Foci Close to Joint. F. König—p 918  
\*Results with Radiation Treatment After Radical Operation for Cancer of the Breast. W. Anschütz and W. Siemens—p 923  
Sacral and Transsacral Anesthesia. A. Lawen—p 930  
Remarks Regarding Operation for Free Perforation of Gastric and Duodenal Ulcers. M. Friedemann—p 934  
Operative Method in Bone Fractures. Indications and Technique. E. Rehn—p 939  
Studies of Blood in Gastric Diseases with Especial Attention to Post-operative Bleeding. T. Naegeli—p 944  
Approach to Kidney. II. Boemlinghaus—p 945  
Preliminary Providing of Artificial Limbs to Recently Amputated Patients. M. zur Verth—p 960  
Artificial Fixation of Fragments by Means of Pegs. F. Loeffler—p 963  
High Ligation of External Carotid Artery for Bleeding from Middle Meningeal Artery. V. Orator—p 965

**Irradiation After Operation for Cancer of Breast.**—Anschütz and Siemens point out that, in order to evaluate properly a statistical report on the results of roentgen irradiation following radical operation for cancer of the breast, the analyzed material should be carefully classified. They adopt the following classification: group 1, nonadherent tumor and no palpable lymph nodes; group 2, (a) nonadherent tumor but palpable lymph nodes which on histologic examination may already show carcinomatous invasion, (b) tumor adherent to the skin or to the pectoral fascia and palpable lymph nodes which on histologic examination show carcinomatous invasion, (c) tumor firmly adherent to the pectoral fascia skin possibly showing carcinomatous infiltration or ulceration and lymph nodes manifestly enlarged and carcinomatous; group 3, adherent tumor, enlarged supraclavicular lymph nodes and large ulcerating tumor. Group 1 comprised only 5.5 per cent of the total

number of patients. Probable enlarged lymph nodes, histologically shown not to be invaded by cancer cells, nevertheless presented a worse prognosis than small lymph nodes. Histologic differentiation did not offer reliable criteria on which to prognosticate the course of the disease. While adenocarcinoma appeared to run a more favorable course than scirrhous or medullary carcinoma, contradictory observations were frequent. All deaths were considered cancer deaths and the three and five year cures did not take into account the presence or absence of metastases or recurrence. The author has had, since 1908, 508 patients who had undergone radical operation. Of these, nine could not be found and fifteen (2.9 per cent) died shortly after the operation. Of the remaining 484 patients, 309 were submitted to irradiation following the radical operation and 175 were not so treated. Results in group 1 were good with either method, though superior with the combination method. It is noteworthy that the combined method here gave 28.8 per cent of ten year cures. In spite of good results obtained by radical operation, irradiation is not to be omitted. More striking improvement in the results was seen in groups 2 a and 2 b. The figures for the three year cure were 22.5 per cent, and for the five year cure 20 per cent higher when the combined method was used as compared with the radical operation alone. The results in groups 2 c and 3 were equally poor with either method. The principle of radiation treatment consisted of giving small doses over a long period. From six to seven exposures were given in the course of four weeks and were repeated after an interval of two months. Irradiation was kept up for two years. The tangential or flanking method of irradiating appeared to be advantageous. Local recurrences took place in 25 per cent of their material. The authors do not regard them as hopeless, for much can still be accomplished by excision and irradiation. They feel that irradiation alone as treatment for carcinoma of the breast is not justified.

### Zentralblatt für Gynäkologie, Leipzig

57: 785 848 (April 8) 1933

- Krukenberg's Tumors During Pregnancy. O. Frankl—p 788  
\*Ovulation in Amenorrhea. K. Heim—p 789  
Thrombosis and Fatal Embolism at Innsbruck Women's Clinic in Years 1919 to 1929. S. Tapfer—p 796  
\*Exsiccation Toxicosis of New Born Infants. N. Louros—p 801  
\*Vaginal Surgical Method for High Tumors of Adnexa. K. Logothetopoulos—p 802  
Anatomic Results of Hemostatic Method According to Logothetopoulos. C. Christopoulos—p 807  
Caesarean Section Performed on Basis of Rare Indication. S. Szteblo—p 810  
Treatment of Rhagades of Mamilla During Puerperium. R. Home—p 811  
New Curettage Speculum. U. Wolff—p 813

**Ovulation in Amenorrhea.**—Heim describes two rare forms of amenorrhea. In the first patient, a girl, aged 21, menstruation had never set in, although the secondary sex characteristics had developed at the age of 15. Periodic pains in the lower part of the abdomen and tension in the breasts were absent but epistaxis set in nearly every four weeks and headaches existed almost constantly. During childhood the patient had had tuberculous processes of the maxillary sinus and of the lumbar vertebrae. The author describes the results of the examination of the internal genitalia and states that the curettage of the uterus yielded large quantities of a peculiar crumbling, whitish matter. The histologic examination of these partly caseous, partly calcareous, masses revealed only necrotic tissue without differentiable structure but with numerous calcareous inclusions. Granulation tissues or bacilli were not observed. Nevertheless, the previous history made it appear probable that these were rests of a tuberculous infection that attacked the uterine mucous membrane probably before sexual maturity was reached. After the curettage the patient commenced to menstruate regularly every four weeks, her appetite, weight and strength increased, and the headaches disappeared. This surprising result, obtained without the administration of hormonal preparations, makes it appear probable that the tuberculous infection did not destroy the entire mucous membrane but that, following removal of the obstruction, its remnants underwent the menstrual changes under the influence of the apparently intact ovarian cycle. The author thinks that conception may become possible in later years. The second case is that of a woman, aged 22, who had been healthy but

in whom menstruation did not return after a normal labor and a lactation period of twelve weeks' duration. The disorder was not a lactation amenorrhea in which there is galactorrhea and atrophy of the uterus, for the mammary secretion had ceased during the fourth month after delivery and the uterus was even larger than normal. The uterine mucous membrane was of intermenstrual thickness, without signs of proliferation and without glycogen production. Ovarian sections revealed that ovulation with rupture of the follicles had taken place several times, but cyclic changes of the endometrium and menstruation did not take place. Thus this case is an example of continuous ovulation during true secondary amenorrhea.

**Exsiccation Toxicosis of New-Born Infants**—Lourous relates his observations on exsiccation toxicosis in new-born infants during the hot summer months in Athens. He states that at times the incidence of the disorder was so high as to assume an epidemic character. The course of the disturbance was usually as follows. Between the third and fifth day of life the vitality of the new-born infant decreased considerably and it could hardly be wakened from a persisting somnolence. The temperature increased considerably, nearly always to 40 C (104 F) and a slightly icteric coloration was generally evident on the following day. Administration of Vichy water proved effective, and since then the author has given ordinary water several times daily as a prophylactic measure. He also advises that new-born infants be kept as cool as possible, either in thoroughly aired rooms or in a shady place outdoors, the surroundings being kept cool by means of a large ice bag. Since he has adopted these measures, exsiccation intoxication has entirely disappeared in his institution and he therefore recommends this procedure, brought to his attention through an article by Burghard to all obstetricians in hot climates.

**Vaginal Surgical Method for High Tumors of Adnexa**—According to Logothetopoulos, vaginal extirpation of inflammatory tumors of the adnexa was formerly done only in cases in which the tumors were located in the lowest portion of the small pelvis, because in the tumors located higher up hemostasis was too difficult with this method of approach. However, in eight cases in which a laparotomy seemed inadvisable owing to the great weakness of the patients and the extremely infectious form of the disease, he nevertheless resorted to the vaginal method, although the tumors were located above the level of the pelvic inlet. The results he obtained in these cases were so encouraging that he recommends vaginal extirpation in cases of acute inflammatory tumors of the adnexa whenever laparotomy seems too dangerous. He employs a large Schuchardt incision and, in order to save time, he ligates only the laterally located vessels, further arrest of the blood flow being obtained by application of gauze. Following extirpation of the uterus the vaginal retractor is removed, the surgeon's hand is introduced in the pelvic cavity and the tumor is removed. The author asserts that the detachment and the extraction of tumors is not essentially more difficult with this method than in the abdominal intervention.

### Hospitalstidende, Copenhagen

76 257 284 (March 9) 1933

\*Hernia of Esophageal Hiatus. A. Wagner—p. 257

\*Familial Occurrence of Leukotrichia Annularis. A. Reyn—p. 273

\*Two Cases of Polycythemia Vera Treated with Roentgen Rays. Fanny Busch—p. 279

**Hernia of Esophageal Hiatus**—Wagner describes the clinical and roentgen results in eleven cases of hernia of the esophageal hiatus in four men and seven women, aged from 44 to 88, revealed on examinations of the stomach made in about 3,000 patients. There were marked dyspeptic and cardiac symptoms in all cases, directly attributed to the hernia in eight.

**Familial Occurrence of Leukotrichia Annularis**—Reyn reports eight cases of pili annulati in four generations of one family. In the literature up to 1921 he found only twenty cases of "ringed hair" and considers it likely that because of its inconspicuous nature and the comparatively rare complications this anomaly is frequently overlooked.

**Polycythemia Vera Treated with Roentgen Rays**—In Busch's first case the white blood corpuscles increased to 19,000 per cubic millimeter during treatment, with simultaneous

myeloid reaction. In the second the white blood corpuscle count continued low, being at a certain time during treatment only 2,900 per cubic millimeter. The colorimetric index, however, rose to over 1 during treatment. Since the treatment ended, neither patient has had subjective symptoms.

### Norsk Magasin for Lægevidenskapen, Oslo

94 361-480 (April) 1933

\*Local Selective Thoracoplasty in Pulmonary Tuberculosis. J. Holst.—p. 361

\*Clinical Contribution to Latent Liver Diseases Especially Latent Cirrhosis of Liver. E. Skouge.—p. 393

Type Determination of Three Strains of Tubercle Bacilli Isolated from Tuberculous Patients Previously Vaccinated with BCG. A. Strøm.—p. 411

\*Skin Tuberculosis of Exogenous Origin in Adults. P. L. Rotnes.—p. 418

Automatic Heat Regulation in Electrical Dry Air Sterilization of Surgical Instruments and Suture Silk. S. Holth.—p. 429

Yellow Fever Epidemic in St. Nazaire in 1861 (Anne Marie Epidemic). T. Thjøtta.—p. 435

**"Selective" Thoracoplasty in Pulmonary Tuberculosis**—Holst reports eighteen cases of plastic surgery of the apex and upper lobe of the lung. Two methods were used. 1. In eight cases in seven patients (one bilateral operation), resection of the four, five or six upper ribs was done, with extensive extrapleural pneumolysis. A periosteomuscular flap, formed from the soft wall freed from ribs, was placed as a cover over the loosened, collapsed lung, with tamponade over the flap. Complete collapse of the cavity resulted in seven cases and partial collapse in one, in one case an infiltration appeared in the lower lobe. 2. In ten cases, total extirpation of the two upper ribs was done, with complete division of all scalenus insertions and resection of parts of decreasing length from the third to the seventh ribs, in some cases with apicolysis in others with extrapleural operation. There was complete collapse of the cavity in seven cases and partial collapse in two, one patient died from pneumonia of the lower lobe of the lung three weeks after the operation. The author says that, if on roentgen examination, two or three weeks after operation insufficient collapse is seen, a supplementary resection of the foremost parts of the third to the sixth ribs from the axilla is done, it is important to perform the second intervention before malformation of the previously resected ribs occurs. The effect of thoracoplasty as described depends on a shortening of the transverse and of the longitudinal axis. The operation extends the indications in surgical pulmonary tuberculosis, because operative treatment of many cases of bilateral tuberculosis becomes possible and because the conservative intervention can be more readily advised than can total thoracoplasty, and it alters the indication, because in localized disorder of the apex or upper lobe exeresis should not be done before local 'selective' surgery has been tried which preserves the sound lower lobe. This treatment in suitable cases in which it is successful is far less expensive than any other treatment for pulmonary tuberculosis, and surgical treatment of pulmonary tuberculosis is one of the most important methods of combating tuberculous infection.

**Latent Liver Diseases**—Skouge says that a positive Takata-Ara reaction in the blood serum is the expression of a considerable liver insufficiency caused by acute or chronic diffuse changes in the liver parenchyma. If the insufficiency disappears, the Takata-Ara reaction becomes negative. A continued positive reaction points to irreparable parenchymatous changes of cirrhotic kind. In several such cases, necropsy revealed pronounced cirrhotic changes of the liver although even shortly before death no clinical symptoms of a liver disturbance were evident. Determination of the coagulation band in liver disorders which is of little diagnostic value, can however, in combination with the Takata-Ara reaction contribute to clarifying the etiology of an ascites.

**Skin Tuberculosis of Exogenous Origin in Adults**—In the first two of the three cases reported by Rotnes, infection occurred on the chin and the upper lip, respectively, after the patients were kissed by tuberculous persons. In the third case the tuberculous ulcer on the right thumb is thought to have been an autoinfection tuberculosis, appearing as a primary complex. All three patients were women. The accompanying erythema nodosum in the second and third cases is regarded as a tuberculous allergy phenomenon.

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## THE PLACE OF THE CLINIC IN MEDICAL PRACTICE

PRESIDENT'S ADDRESS

DEAN LEWIS, M.D.  
BALTIMORE

Trousseau once made this statement "To know the natural course of disease is more than one half of medicine" Today, study of the course of disease is neglected At least it is not so well known as by the earlier clinicians, who had to rely on their ability to know the course and characteristics of disease and who were less dependent than the present-day physicians on instruments of precision I have heard it said not infrequently, and I am sorry to say often with a tone of derision, that the day of saddle bag medicine is past The brain power of those who practiced saddle bag medicine was quite equal to that of physicians who practice today The physicians of that era knew disease, because of necessity they had more intimate contact with it and were in more intimate relation to it.

When the specific causes of a number of diseases were made known, medicine was revolutionized, new lanes of commerce were opened and lands, uninhabitable because of disease of unknown cause, were made tillable The present generation no longer views with wonder the automobile, no longer is amazed at the telephone and no longer regards as miraculous the radio The present generation little appreciates what a boon the recognition of the specific causes of disease has been—what aseptic surgery means

Before the advent of our modern knowledge of infection, communicable diseases devastated mankind Gibbon gives the following account of the plague in the reign of Justinian "In time its malignancy was abated and disappeared, the disease alternately languished and revived, but it was not till the end of a calamitous period of fifty-two years that mankind recovered their health and the air assumed its pure and salubrious quality No facts have been preserved to sustain an account or even a conjecture of the numbers that perished in this extraordinary mortality I only find that during these months four and at length ten thousand persons died each day at Constantinople and that many cities of the East were left vacant, and that in several districts in Italy the harvest and vintage withered on the ground The triple scourge of war, pestilence and famine afflicted the subjects of Justinian and his reign is disgraced by a visible decrease of the human species, which has never been replaced in some of the fairest countries of the globe" The historian Niebuhr, in

discussing the report on the plague in Athens by Thucydides, says "Almost all great epochs of moral degradation are connected with great epidemics The immediate effect on the people was a religious paralysis Instead of turning men to God, the scourge turned them to despair, and this not only in England but in all parts of Europe Writers of every nation describe the same dissoluteness of mourners consequent upon the epidemic. The world, scourged and devastated by an epidemic such as the plague, is not changed for the better, for afterwards the people become more avaricious and grasping, even if they have more of the world's goods than before They become more covetous and become involved in law suits, quarrels, strife and contradictions" Physical and moral deterioration go hand in hand

Nevertheless it was from such an atmosphere as this that modern medicine evolved, from a medicine that fought disease with magic and superstition to the great clinics and schools of medicine of today

Recently I looked up the definition of the word clinic. The word may be employed in a number of different ways It has been applied to one confined to a bed of sickness, for example, "Bring to us a clinic and we will instantly restore him sound and in health" The word also has an ecclesiastical usage, being applied to one who received baptism on a sickbed "Suppose the clinic or death-bed penitent to be forward in these employments" In medicine the word refers to the examination of a patient by an instructor in the presence of students, accompanied by a discussion of the nature and treatment of the case More recently the word has been applied to a group practicing medicine or to a building housing such a group Garrison has said that the basic idea of a surgical clinic as a teaching device is inherent even in a group of primitives assembled about an operating table with an eye single to learning something

### DEVELOPMENT OF THE CLINIC

It is difficult to determine when medical and surgical patients were first separated from each other and distinct medical and surgical clinics formed In 1753 a clinic was established at the University Hospital in Vienna In 1776 this clinic was transferred to another hospital At this time specific mention is made of the establishment of a surgical clinic, which must not have developed to any great extent, for little or no mention is made of it in the surgical literature of that or later periods

Desault was made surgeon to the Hotel Dieu in 1785 When appointed, he requested that six beds be set aside for surgical patients So much emphasis is laid on this request that the segregation of medical and surgical patients must have been a distinct innovation

President's address before the American Medical Association at the Eighty Fourth Annual Session Milwaukee, June 13 1933

The surgical clinic had now become a distinct entity. Organization in clinical surgery was initiated. Patients were intensively studied, the clinical courses of surgical diseases were carefully followed, clinical and pathologic observations were correlated, and a postoperative follow-up system was established. This clinic became popular and at times as many as 600 visiting doctors were in attendance. During the French Revolution the clinic was closed. It died with Desault.

That separate clinics did not develop rapidly or to any great extent is indicated in a paper by Frank entitled "A Plan for a Clinical School or the Method of Teaching the Practice of Medicine in a University Hospital." This paper in which was discussed a plan for the establishment of a practical school of medicine was published in 1790. Frank in this paper gave not only a clear exposition of the basic methods of clinical instruction but also a precise statement of the relationship of the clinic to the hospital as a whole. His requirements were high for the time. He had no great consideration for his colleagues. He asked that but ten beds be reserved for clinical instruction, but he insisted on the unconditional right of the instructor to transfer any case suitable for clinical purposes to one of these beds and to remove the patient to the general ward, once the purpose of the instructor had been served. This arrangement suggests that there were not separate medical and surgical clinics as late as 1790, for the plan elaborated by Frank was merely the removal of patients from the general ward while they were being used for clinical teaching. They were returned to the general ward as soon as they had served this purpose.

A distinguished group of French surgeons appeared after the Napoleonic wars—Dupuytren, brilliant, but autocratic and severe, who probably delayed the recognition of appendicitis by almost fifty years, Lisfranc, famed for his amputation, Jobert for his work on intestinal suture, Civiale for his sound, and Denonvilliers for his complete and clear description of the fascia about the prostate. The reign of Louis Philippe probably marked the most brilliant era of French surgery. All these surgeons were highly individualistic.

A clinic in its organization often reflects to a great degree the political or governmental genius of a people. In Germany, where, during the middle and latter part of the nineteenth century, the clinic reached its highest development as a teaching and training device, anatomy, histology, physiology and pathology played important rôles in the development of those working in it. In following the career of Langenbeck, who developed the greatest clinic of the period, one must be impressed by the fact that his early investigation was far removed from general surgery. His graduating thesis was on "The Structure of the Retina." This subject was probably suggested by his uncle, who was then professor in Göttingen. This was soon followed by a paper on "The Changes in the Retina in Disease." His preparation then was widened, for he became a docent in physiology and microscopy and soon began teaching operative surgery on cadavers, giving private instruction. His training was supplemented by travels in England and France. Methods of the medical men of these two countries were closely observed. At an early age he was made professor of surgery in Kiel. The Holstein War offered him opportunities to practice war surgery. His work was so brilliant that before the

war was fairly over he was called to the chair of surgery in Berlin left vacant by the death of Dieffenbach, who fell dead when about to operate.

In 1848 when Langenbeck took over the Surgical Clinic in Berlin, there were twenty-eight surgical beds seven for first class nine for second class and twelve for charity patients. When he resigned, thirty-four years later, 189 beds were devoted to the care of surgical patients. Organization, almost military in type, was one of the outstanding features of this clinic. The chief had a graded staff, the members of which remained in the clinic over a number of years, with an opportunity to develop, work being done under supervision until responsibilities could be assumed without risk. Long preparation without outside attractions gave the men in it a scientific love of surgery which they never lost. Those in the clinic were thoroughly grounded in biology and pathology, both anatomic and experimental. The conclusions reached as the result of clinical examinations or experiments were subjected to the closest scrutiny. The rationale of joint resections, so extensively employed and popularized by Langenbeck, was based on the experimental work of Heine. He presided over the first meeting of the Deutsche Gesellschaft für Chirurgie and in his address emphasized strongly that the science of surgery must always control the art, and that animal experimentation is imperative if the science of surgery is to progress.

He had dignity without aloofness. During his entire career he published but forty-seven articles—how few, when we think of the multitude of articles published today—but deep thought and conservative originality are found on every page he wrote. He devised few operations, but his uranoplasty and methods of joint resections have stood the test of time. He was pre-eminently a developer of surgeons.

#### INTERDEPENDENCE OF CLINIC AND LABORATORY

Many changes were now occurring in medicine. The experimental laboratory had developed rapidly, and the problems arising in the clinic were subjected to experimental study. Virchow's ideas on investigation were thus expressed in the first number of his *Archiv*: "The ideal we shall strive to realize, so far as it is in our power, is that practical medicine shall become applied theoretical medicine and theoretical medicine shall become pathologic physiology."

"Pathologic anatomy and clinical medicine, the justness and independence of which we fully recognize, are essential to us as sources of new questions, the answering of which will fall to pathologic physiology." He continued, "Pathologic physiology takes its questions partly from pathologic anatomy, partly from practical medicine, it creates its answers partly from the bedside and thus is a part of clinical medicine, and partly from experiments on animals. The experiment is the ultimate and highest resort in pathologic anatomy." The clinic was now enlarged to provide facilities for the solution of problems which could not be solved by clinical investigation. When the field of surgery was extended after the introduction of antiseptic and aseptic procedures, the results of animal experimentation were applied to man and the knowledge of human physiology was greatly increased by the study of the effects of operation on man performed for the relief of definite lesions.

The rapid advances that were made in the knowledge of the physiology of the thyroid, hypophysis, spleen,

pancreas and other glands were primarily due to the accurate clinical investigations of symptoms associated with altered function and the changes that followed medical or surgical therapy. At times these studies did not progress rapidly and there were periods when there seemed to be little or no progress, followed by periods of intense activity, in which suddenly the problem was solved. Diabetes and the discovery of insulin is a most striking example.

It is almost fifty years since the syndrome of acromegaly was described. At first the tumor associated with this lesion was thought to be a sarcoma, and the syndrome for some time was thought to be due to destruction of the gland. Later Benda demonstrated by his mitrochondria stain that the cells composing the tumor were composed of the eosinophil cells and that the syndrome must be due to overactivity of the eosinophil cells. The relationship of altered hypophyseal function to different clinical syndromes was understood. Experimental investigation followed, and the syndromes associated with loss of secretion or altered function were definitely determined.

It is almost unbelievable that criticism should be offered of the experimental method when such rapid advances occurred. The clinic and the laboratory were interdependent. Lasegue, however, made the following statement: "But, fortunately the danger resulting from the opinion of these physiologists that they can disregard medical observation is less than one would think. They observe little and they observe badly. They explain much, or rather explain everything. They pass quickly from hypothesis to practice. But after the most adventurous excursions they all end peacefully at the same point, the point which had already been reached, and medicine proceeds undisturbed, though with caution on its onward march."

#### THE CLINICAL SENSE

The clinic and the laboratories are now in complete accord. Out of the gradual combination of laboratory investigation with medical practice and investigation, and teaching at the bedside came the development of our modern clinics and medical schools.

Science had taken command. The cause of many infectious diseases had been determined and preventive measures could be employed with certainty. The functions of the ductless gland were understood, and the relation of the alteration of the secretion of these to clinical syndromes was recognized and their interrelationship suspected.

The fundamentals of clinical medicine and surgery were somewhat overshadowed by the laboratory. The importance of history taking and physical examinations was gradually being displaced by the data derived from the mechanical devices, and a much greater value was placed on research than on mastery of the subject which the clinician taught. No one denies the value of research, but mastery of the subject should have an equally high rating.

It has been said of Briggs of Burnley that he knew "the face of disease." He had built up in his mind, as a consequence of teaching he had received from older practitioners and as a result of his own experiences, a number of subtle and most comprehensive pictures, each one of which represented some form of human application. For him these had a clear and definite meaning, and at the sight of any one of them Briggs would express an opinion about the prospects

of the patient showing the picture, which opinion, as a rule was justified by the event.

Medical knowledge of this kind is sometimes spoken of as "clinical sense," the implication being that it is an inborn gift possessed by but few men. This view was not held by the older physicians, for it was realized that it could be cultivated and every doctor was at pains to cultivate it himself. Assistantships and partnerships in old established practices were in consequence early sought for.

During the past year the American Medical Association has lost in the death of William Sidney Thayer one of its best friends—a past president—who exemplified in his daily practice the highest type of a clinician. He knew well the face of disease and had "the clinical sense" developed to the highest degree. I have often watched him at work and have been amazed. He had been endowed with keen senses, which he daily exercised. Thus they became more and more acute. His clinical sense was not inborn. It was developed by long years of history taking and clinical examinations made with meticulous care, the observations and end-results being correlated with the pathologic changes found at autopsy or the operating table. He possessed an accumulation of correlated experiences on which he could always call. Mechanical methods were ancillary. He would arrive as nearly as possible at a conclusion by the fundamentals of clinical medicine and ask only for those tests which he thought would contribute to an accurate diagnosis. He used the laboratory with discretion.

It is said that MacKenzie in his later days became indignant when he realized that his reputation among his colleagues was based on the very kind of work of which he had spent his life proving the fallaciousness. He had become known as the Man of the Polygraph, the Man of the Tracing and not as the Man Who had Learned to Foresee Danger. To think, the bush had been valued while the fruit was ignored. His keen and ever present sense of humor came to his rescue. He saw the comic side of it all. Once again the mechanical device, Science with a capital S, had triumphed over mind and reason.

I believe that readjustment is going on steadily and that the relation of the clinic and the laboratory is much more nearly that which is desirable than it has been in many years.

#### CLINICAL INSTRUCTION AND CONTROLLED EXPERIMENTATION

There can be no argument over the following statement made by the Committee on Medical Education:

Stimulating teachers who are masters of these subjects and who can inspire their students are vital features of the educational program.

There is no substitute for the master clinician in the clinical fields of instruction. It is vital that universities provide the inducements which will attract and hold clinicians of the caliber and ability which teaching in this field requires, and which the responsibilities for the care of patients in the hospital and clinic demand.

One student is attracted by one teacher, another by another. If a teacher inspires, the student observes closely and listens with enthusiasm. The subject matter is much the same, but the way it is presented, as does the relation between the student and the teacher, differs widely. The elective system, which permits students to go from one university to another, enables a student

to meet stimulating teachers whom they know because of books, articles or statements by other students. If a student selects his teacher with enthusiasm, he will probably study with enthusiasm. Enthusiasm promotes study more than programs and curriculums. Students may be idling and wasting time with one instructor or at one university and, on meeting another instructor, suddenly become enthusiastic. I have heard recently much of pedagogy. I know that one may be a great clinician and another, apparently equally equipped, never will become one. One can impart knowledge and stimulate to increased endeavor, another cannot. Pedagogy is largely a question of personality.

Controlled experimentation is the foundation stone of medical progress. Since 1871, when Philadelphia surgeons attempted to secure dogs for experimental purposes from the animal shelter which had been established by the woman's branch of the Pennsylvania Society for the Prevention of Cruelty to Animals, repeated efforts have been made to have regulative legislation passed through state legislatures. When regulations, often largely under lay control, have been made, laboratory work performed to elicit new facts or to aid in diagnosis has been seriously interfered with. Schafer has recently shown to what extremes those opposed to animal experimentation may go, and how much scientific procedures may be restricted. In Great Britain and Ireland no medical man is permitted to make a Zondek-Aschheim pregnancy test unless he has a license to practice vivisection, and then he can make such a test only in a place registered under the act. A special certificate to keep a mouse alive for a few days is required to make such a test. Hospitals debar themselves from making the observations necessary to the diagnosis of many common diseases, but even more to those diseases the rapid and efficient diagnosis of which depends on the results obtained by inoculating animals. But even when the hospital has a well equipped laboratory, experiments on living animals, whether for diagnostic purposes or not, are usually barred by the hospital authorities. Such diagnostic procedures as are employed daily cannot be made under the same roof as the patient although the treatment and prognosis depend on the data derived from such procedures. The hospital authorities fear that they may offend wealthy donors who are opposed to such procedures. The patient suffers and the most efficient care is seriously interfered with.

As far as the dog bill is concerned, Dr Grace Briscoe states the case well.

*If it is wrong to use dogs in the search for knowledge, it is equally wrong to use any other of the higher animals. If it is permissible to experiment on animals for the sake of suffering humanity, then we must not shrink from applying that principle to the most domesticated of all animals—the dog—provided there is real necessity for its use. Medical women must face the issue, as they have perforce to use the results gained from animal experimentation in everyday practice. Can they in all fairness disapprove of such experimentation and, at the same time, make use of beneficial knowledge gained therefrom?*

The questions most difficult of solution are those which stir the emotions. The antivivisection agitation is largely kept active and financed by women. While the propaganda is largely against a dog bill, the whole principle of animal experimentation is at stake. The members of the Woman's Auxiliary should be most active in combating this movement. Eternal vigilance

must be exercised and untiring effort maintained. It is unbelievable that those to whom we minister not infrequently believe that a Dr Jekyll is transformed into a Mr Hyde as soon as he crosses the threshold of an experimental laboratory.

The American Medical Association, aware of the defects of medical education, made an exhaustive survey and published the results in 1900. In 1904 the Council on Medical Education was formed. Later the study of the hospital situation was undertaken and the body was then called the Council on Medical Education and Hospitals. The entrance requirements to medical colleges were raised, the course lengthened, improved, pedagogic methods introduced and the entire plan of medical education reorganized—it might be justly said revolutionized.

The change that occurred is recent history. Many of the schools could not meet the requirements and were closed. At the present time there are seventy-six approved medical schools in the United States. Ten of these give only the preclinical course of two years. In addition to these approved schools there are six which are recognized as medical schools. These are located in Illinois, Massachusetts and Missouri and are not recognized by the licensing boards of other states. Their graduates may appear before licensing boards of their own state. The graduates of these six schools represent but 2 or 3 per cent of the total graduating each year.

#### OVERPRODUCTION OF PHYSICIANS

In spite of the reduction in the number of medical schools there has been no decrease in the number of physicians licensed. In 1918, 4,205 physicians were licensed. This small number was probably due to regulations that were set during the war. This is the smallest number appearing before licensing boards for the last fifteen years. Since 1927, when 7,269 appeared for licensure, the number has been fairly constant. In 1918 but 56.5 per cent were graduates of class A schools, while in 1931, 91.3 per cent graduated from class A schools. The quantitative change is thus seen not to be so great, the qualitative change is. There apparently is an overproduction of doctors. How such overproduction can be controlled, or whether it should be controlled, is a problem for the Council on Medical Education and Hospitals. The medical schools cannot be reduced in number to any great extent, for there may come a time when the number required to meet the need is not great enough, and medical schools do not develop rapidly. We can, however, restrict the number from foreign schools who came to us after graduation. This condition will, I believe, right itself.

At present the number of persons per physician in the United States is approximately 780. This is a lower number than in any European country. Careful studies indicate that there are in the United States 25,000 more physicians than are required. They are poorly distributed and probably will continue to be. In certain instances it might be well to consider moving people from undesirable into more happy surroundings, not for the accommodation of the prospective doctor but for the health and happiness of the people, who might, under new conditions, make surroundings and life so attractive that physicians could not resist the desire to practice among them.

The overproduction of physicians, increased specialization and improper distribution should have serious consideration at the present time.

REPORT OF THE COMMITTEE ON THE COSTS  
OF MEDICAL CARE

During the past year, reports have appeared from different committees and commissions which have had to do with medical economics. The report of the Committee on the Costs of Medical Care has been discussed so often that I am sure all are familiar with the contents. I have been interested in determining what impression the report has made on lay people. They can hardly be accused of preformed or prejudiced opinion. Freehoff has analyzed the report and makes the following observations:

Therefore, the committee proposes what, as far as I can recall, is the most radical social suggestion ever made by a responsible commission, namely, that we transform our whole system of medical care. Many physicians, they say, are now connected with a hospital or with a clinic of some kind. This connection accounts for part of their activity. Every physician has in addition his private work with his patients. Now it is proposed to abolish all private work of physicians and organize all physicians permanently in these medical centers. If you want medical help you will never have your own physician, but you will be part of the services of this medical center. All work will be hospital or clinic work. As for payment, again you will not pay as you do now, namely, as you need it. There will be a voluntary insurance plan, supplemented by taxation. Every one will make a regular contribution into a social fund and every one will be entitled to go to the medical centers to receive whatever treatment he needs. All will receive the same treatment. In other words, private medicine is abolished; social medicine takes its place.

Such is the impression that a nonmedical man gets when reading the Majority Report, although we are assured by some on the committee that the bogey man of socialized medicine has scared organized medicine.

There seems to be some confusion, even among the members of the committee, as to how the complete medical service is to be given. They do not advocate a universal or common scheme of voluntary insurance. Provision of service is made through clinics in cities, whose organization and influence should radiate to the suburbs and into the country. How many groups there should be—whether separate, independent or competing, is not stated.

Included in the plan of organization is an agency in each community through which the lay and professional groups concerned in financing medical service could consult, plan and act in behalf of the best provision of medical resources which the community can afford. What constitutes the community and what the nature of the agency is indefinite.

In this report it is frequently stated that the mistakes of the European systems should be avoided. It is well known that voluntary health insurance has not been successful and that when started it has soon become compulsory. Frequently it has been stated that the mortality has not been decreased under any of these systems, and that the stay in hospitals has been doubled under them. Some interesting figures have been given concerning the panel system in England. During the period from 1921 to 1927, sickness benefit claims have risen from 41 per cent to 159 per cent, the most marked increase in claims being seen in short illnesses. In 1929, 410,903 cases were referred to the regional medical officers for the question of malingering. The prospect of an examination caused 109,661 to declare themselves off the funds, and 89,750 failed to attend for other reasons. The number actually examined was 143,898. Of these, 76,162 were found incapable of work. Thus, of the

original 410,903 five sixths were palpably frauds. This is a sad commentary on the system, which compares most unfavorably with our present system, one of the chief objects of which is to lessen the length of sickness, reduce the disabilities following injury and return the patient to economic life with an earning capacity reduced but little, if at all—a system designed to make a self-reliant, self-respecting, ambitious member of society.

THE FOUNDATION OF EFFICIENT  
MEDICAL SERVICE

The family doctor or general practitioner is the foundation of any complete and efficient medical service. He knows the family and the personal history and is not infrequently the confessor and guide. Neglect of the family physician leads people to seek specialists on the slightest provocation and has encouraged men and women to enter the specialties without that long training in general medicine, pathology and hospital practice which is the foundation of successful work. We all recognize the evils that are associated with too early specialization with insufficient preparation, and still this is abetted by lack of appreciation of the family physician.

Cooperation should replace unrestricted competition. I believe that a ward should be set aside in general hospitals for general practitioners to which they might send patients requiring hospitalization. Such a ward could be properly supervised through the staff. The general practitioner would retain his patient. Work in such a ward would offer him an opportunity for continuing graduate study. I am not in favor of the university group clinics suggested by the Majority Report. The university can render, however, a distinct service by establishing diagnostic clinics, in which, for a minimum fee, a diagnostic survey can be made when required, but no patient should be admitted to such a clinic unless accompanied by a doctor or carrying a letter from a doctor. When the diagnosis is made, the patient should be returned to the doctor, with whom consultation may be held from time to time concerning the progress of the case and change in treatment. In such instances the clinic would, like the laboratory, be called on when it is needed to complete a diagnosis.

Suitable hospital construction distributed in areas according to established community needs lessens the amount of duplication in the equipment of the offices of the different physicians in the different localities and thus lessens overhead. Good roads and motor transportation make such hospitals easily accessible, even to patients at remote distances.

The duplication of expensive equipment increases the overhead, as does the elaborate and ornate construction of many of our hospitals. Many of the hospitals resemble luxurious hotels. Mencken has well said that the cost of lodging a free patient has increased at almost the same rate as lodging a pay patient, and that in most hospitals of any pretensions caring for the former the costs per diem are more than those of the average American hotel for a room, a bath and three meals.

It is suggested from time to time that doctors when paid for taking care of the sick are not apt to take a real active part in the prevention of disease. No argument need be wasted on such unfounded criticism, for health prevention movements have been initiated by practicing physicians and the record and tradition of the profession testify to their activity in the field.

Doctors welcome public health measures and, I am sure, will do everything in their power to prevent politics from entering into the field. Those in charge of public health measures should be specially trained and qualified and those practicing curative and preventive medicine should cooperate to the fullest. There should be no quarrel between the two. The greatest cause of friction will be the extension of the health service into fields on which they should not encroach.

The pregnant mother, eugenically advised, visits the prenatal clinic, and when the baby is born both pass to the welfare center, and the family is watched through the seven different ages of life. I sometimes wonder whether in trying to keep our health we shall find time to enjoy life, retain our liberty and engage in the pursuit of happiness. There is a great deal of truth in the following: "To live a full and swift, even though unhealthful life and to be speedily destroyed, is better than to live healthily and long and be bored."

We all recognize that there are defects in medicine as practiced in this country today. There will be defects in any system that is employed, because it is human nature to err and there is a lot of human nature in all of us. But, as has been stated by the Commission on Medical Education:

There are fundamental advantages in the American scheme which ought to be retained and extended. The solution of the problem is not destruction of the present system and the substitution of a paternalistic plan ill adapted to the philosophy of American life, but rather the evolution of a pattern which will embrace the desirable features of the present method and a correction of its defects.

It is obvious that there are features of finance, problems of organization and interests of the public involved in providing medical service for a community but a thoughtful examination indicates that the professional and technical features predominate. The quality interpretation and correlation of scientific knowledge are dependent on a trained personnel who know the significance of that knowledge and how to apply it.

The clinic and hospitalization have reached their present development and efficiency as the result of the successive efforts, technical skill and idealism of many generations of physicians. The same idealism and ability will settle problems as they arise. Many times their suggestions may run counter to the trends of the time. Medical statesmanship will provide the solution.

It should be remembered that organization is not a synonym of efficiency, neither is change a synonym of progress.

**The Cycle of Change**—At the same time standards of education and of living have been elevated so that the individual is caught between his desire for better things and his inability by his individual efforts to obtain them. In this dilemma he turns to the state or to organized industry for relief thus further sacrificing his independence of action and thought. To this, the man who values the preservation of his own individuality objects, and seeks to bring about a compromise between the interests of society and his own. As Mr. Coyle has written, "If a new culture is to come, the economic adjustment needs to be on the democratic rather than on the technocratic side. The latter calls for government of all organized society by the economic system that produces and distributes material goods. The former assumes the right of society, acting as a whole to apply certain regulatory measures to the economic system and then to devote its main interest to other things. Technocracy would abolish freedom in the interest of efficiency. Individualism in its new form would enlarge freedom of initiative at the expense of efficiency, since the efficiency of these new machines is so great that there is plenty to spare." —Harvey S. C. Oikonomia Medika, *Jale J Biol & Med* 5 323 (March) 1933

## THE POSTOPERATIVE CONTROL OF DISTENTION, NAUSEA AND VOMITING

A CLINICAL STUDY WITH REFERENCE TO THE EMPLOYMENT OF NARCOTICS, CATHARTICS, AND NASAL CATHETER SUCTION-SIPHONAGE

JOHN R. PAINE, MD  
HERBERT A. CARLSON, MD  
AND  
OWEN H. WANGENSTEEN, MD  
MINNEAPOLIS

Surgical operations are necessarily followed by pain, often requiring for its relief the administration of morphine or other narcotic drugs. In varying degree, distention, nausea and vomiting occur so regularly after abdominal procedures, particularly after operations on the upper part of the abdomen, that one tends to accept them as inevitable consequences of laparotomy. The effect of opiates on the tone and function of the gastrointestinal tract is, therefore, an important consideration in the management of patients during the postoperative period, especially on those occasions when signs of inhibitive (paralytic) ileus become prominent.

Other factors may influence the degree of distention or the incidence or severity of nausea and vomiting. Among these are cathartics, drugs acting on smooth muscle, enemas, and intubation of the upper reaches of the alimentary canal.

The work presented here divides itself into two main parts. The first is concerned with a series of postoperative cases treated with high morphine dosage, low morphine dosage, pantopon, dilaudid (dihydromorphine hydrochloride) and saline cathartics. The second deals with the postoperative use of suction applied to a Levin duodenal tube inserted through the nose into the stomach.

### THE USE OF NARCOTIC DRUGS AND SALINE CATHARTICS IN THE POSTOPERATIVE PERIOD

**High and Low Morphine Dosage**—The constipating effect of opium and its principal alkaloid, morphine, has been recognized since their introduction into southeastern Europe shortly before the birth of Christ.

This constipating effect has usually been assumed to be due to a diminution of the tone of the intestinal musculature and force of the peristaltic activity. Statements may be found in textbooks and in current literature supporting this view of the effect of morphine on the bowel.

It is interesting to note that as early as 1865 Nasse<sup>1</sup> showed that morphine sulphate caused an increased frequency in the peristalsis of the intestine of frogs and rabbits. Since that time the question has been the subject of much experimentation with investigators arriving at various results. That the effect of the drug may vary with the conditions under which it is given and with the size of the dose seems probable. In 1926, Plant and Miller<sup>2</sup> studied the effects of morphine on the small intestine of dogs. Their results showed that

From the Department of Surgery, University of Minnesota Medical School.

<sup>1</sup> Nasse O. Zur Physiologie der Darmbewegung. *Zentralbl f. d. med. Wissenschaften* 3: 785, 1865.

<sup>2</sup> Plant O. H. and Miller G. H. Effects of Morphine and Other Opium Alkaloids on the Muscular Activity of the Alimentary Canal. *J. Pharmacol. & Exper. Therap.* 27: 361 (June) 1926.

there was a stimulation of many phases of muscular activity, including increases in tone, peristalsis and rhythmic contractions. Limited experiments on patients confirmed these results. Gruber, Greene, Drayer and Crawford<sup>3</sup> also found that in dogs morphine caused an increase in the tone of the intestinal muscle for which effect atropine exhibited reciprocal antagonistic action. In our laboratory, it was shown<sup>4</sup> that morphine uniformly enhances the tone and the peristaltic activity of the normal as well as the obstructed intestine. Observations were made on both dogs and human beings with strictly comparable results. The constipating effect of morphine is now best explained on the basis of increased tone of the sphincters and inhibition of the defecating reflex.

It was this conception of the idea of the effect of morphine on the small intestine that prompted us to determine, if we could, the effect of low and high morphine dosage on postoperative patients with respect to the severity of gas pains, the amount of nausea vomiting and distention they experienced, and the number of enemas they required. Most of our observations were directed toward patients with abdominal operations, though a fair number were made on patients with other surgical procedures for purposes of control.

Arbitrary distinctions had to be made for the 'low' and 'high' dosages. We decided to consider 'low' dosage as being doses of morphine sulphate,  $\frac{1}{6}$  grain (10 mg) given not oftener than twice a day for no more than two days, and 'high' dosage as being doses of morphine sulphate,  $\frac{1}{6}$  grain (10 mg) or  $\frac{1}{4}$  grain (15 mg) given not less than three times a day for three days or more. Most of the patients on the 'high' dosage regimen received daily four  $\frac{1}{4}$  grain (15 mg) doses for three or four days. In the patients receiving 'low' dosage in whom pain required some narcotic, codeine sulphate, 1 grain (60 mg) or  $1\frac{1}{2}$  grains (90 mg) was given as sparingly as possible. Special daily records were kept on each patient. On these records were recorded the time and dosage of all morphine or other narcotic given, daily estimations of the amount of nausea, distention and vomiting, estimations of the severity of the gas pains, and a record of the bowel movements and enemas. Observations were made for five or six days after operation and in some cases for the entire period of hospitalization.

TABLE 1—High and Low Dosages

Operation	High Dosage (30 Patients)	Low Dosage (24 Patients)
Herniotomies	5	6
Cholecystectomies	11	7
Appendectomies	14	11

Thirty patients were given morphine in "high" dosage and twenty-four were given morphine in "low" dosage (table 1).

The hernias were all inguinal except one. One patient had a femoral hernia and received a low morphine dosage.

In the "high" dosage group the interval appendectomies were about twice as numerous as the appendectomies for acute appendicitis. In the "low" dosage group the division was about equal. The cholecystec-

tomies were all performed for chronic or subacute cholecystitis or cholelithiasis. The usual anesthetic in all the cases was spinal (procaine hydrochloride crystals). This was supplemented when necessary by nitrous oxide or ethylene.

In our own minds it seems that there could be no question about major surgical cases requiring narcotics. Such patients have pain which for from twenty-four to forty-eight hours is often severe enough to require morphine. In our opinion there is no justification for withholding morphine unless by its administration complicating factors are introduced or the patient's postoperative convalescence is prolonged.

TABLE 2—Effect of Morphine, Pantopon and Dilaudid on Distention Nausea Vomiting and Gas Pains

Dosage	Cases	Distention Degree				Nausea Degree				Vomiting Degree				Gas Pains Degree			
		0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
Cholecystectomy																	
Low morphine	7	2	1	4	--	--	4	1	1	1	--	4	--	2	1	--	
High morphine	11	--	6	4	1	--	1	7	3	--	--	2	6	3	--	3	
Pantopon	8	2	6	--	--	--	1	2	3	2	--	4	3	1	--	1	
Dilaudid	5	1	3	1	--	--	--	3	2	--	--	1	4	--	--	--	
Appendectomy																	
Low morphine	11	6	--	5	--	--	8	3	--	--	--	8	3	--	--	7	
High morphine	14	4	9	1	--	--	7	7	--	--	--	10	4	--	--	5	
Pantopon	8	5	2	1	--	--	6	2	--	--	--	7	1	--	--	3	
Dilaudid	7	4	2	1	--	--	3	2	3	--	--	5	2	--	--	1	
Herniotomy																	
Low morphine.	6	4	2	--	--	--	5	1	--	--	--	5	1	--	--	4	
High morphine	5	1	2	--	--	--	1	4	--	--	--	1	4	--	--	2	
Pantopon	7	2	4	1	--	--	3	2	2	--	--	5	2	--	--	2	
Dilaudid	3	3	--	--	--	--	1	1	1	--	--	1	1	1	--	1	

In referring to the tabulated results (table 2) it should be borne in mind that the low morphine dosage was frequently inadequate to control the pain properly, especially in the group of cholecystectomies. On the other hand, the high morphine dosage was excessive for many of the patients, notably those who had appendectomies or herniotomies. The optimum morphine requirements of the average patient lie between the extremes employed in this experimental study.

It is to be noted that distention, nausea vomiting, gas pains and constipation occurred independent of the administration of morphine. Distention of moderate or severe degree occurred with slightly greater frequency in the high morphine dosage series, but the difference is not striking and may not be significant. Nausea and vomiting were definitely increased when morphine was administered frequently and in effective doses. The nauseating effect of morphine was clearly demonstrated in certain patients who had little pain and refused further doses of morphine because it made them 'sick'. The effect of morphine on "gas pains" is difficult to evaluate because, although peristalsis and intestinal tone may apparently be increased, the patient's sensibility to pain is at the same time effectively obtunded. The number of enemas required was not found to be an accurate gauge of the constipating effect of morphine because they were usually given in a routine manner by order of the house surgeons. Furthermore, any constipating effect which might have been due to morphine (by inhibiting the defecating reflex or by increasing the intestinal tone) was obscured by the fact that practically all of the postoperative patients failed to have normal bowel movements early as an effect of the operation itself and because of the low residue diet.

No serious consequences of even excessively high morphine dosages were found in this part of our investigation. On the basis of the results obtained, we believe that morphine neither prevents nor relieves abdominal distention nor is it an important factor in its

<sup>3</sup> Gruber C. M. Greene, W. W. Drayer C. S. and Crawford W. M. Further Studies on the Effect of Morphine Sulphate Atropine Sulphate and Hyoscine Hydrobromide on the Intact Intestine in Unanesthetized Dogs. *J. Pharmacol. & Exper. Therap.* 38:389 (April) 1930.  
<sup>4</sup> Dyorak, H. J. Carlson H. A. Erickson T. C. Smith V. D. and Wangerstein O. H. Influence of Morphine on Intestinal Activity in Experimental Obstruction. *Proc. Soc. Exper. Biol. & Med.* 28:434-437 (Jan.) 1931.

production. No factors prejudicing the employment of adequate doses of morphine for the control of pain have been revealed by our studies.

**Pantopon**—Pantopium hydrochloricum is a purified mixture of the alkaloids present in opium, contains about 50 per cent morphine, is soluble in water, and is recommended in doses of from  $\frac{1}{2}$  grain (20 mg) to  $\frac{1}{2}$  grain (30 mg). It was introduced into therapeutics by Sahli, who with others thought that certain of the alkaloids present in opium, while relatively inert themselves as sedatives, had a marked synergistic action in increasing the analgesic effect of morphine if administered with it. Barth<sup>5</sup> and Schwenter,<sup>6</sup> in 1912, studied its properties and its effects on both human beings and

that it affects the bowels less and does not cause nausea as much or as often as does morphine.

It was to test certain of these claims and to note whether postoperative patients would in general be more comfortable when pantopon was substituted for morphine in a series of cases that the effects of this medication were studied. Special charts were kept on these patients as in the series concerned with morphine dosage and the same observations made. Doses of  $\frac{1}{2}$  grain (20 mg) were used, though in a few cases  $\frac{1}{2}$  grain (30 mg) and  $\frac{1}{4}$  grain (15 mg) were substituted. Pantopon was given as required for the control of pain except in two patients who were given doses of  $\frac{1}{2}$  grain (20 mg) every four hours for three days following cholecystectomies. Records were kept for from four to five days postoperatively.

Observations were made on thirty-six patients, operated on as follows: herniotomy, seven cases, cholecystectomy, eight cases, appendectomy, eight cases, miscellaneous, thirteen cases.

A study of the results in table 2 leads to the conclusion that the patients given pantopon postoperatively showed no great improvement in postoperative nausea, vomiting, distention or gas pains over patients given morphine. What differences there are are slight and could be discounted on the basis of the small number of cases observed.

What was said concerning enemas in the morphine series may be said here. Comparison is difficult since at times they were given more or less as a routine. There was, however, somewhat less constipation than when morphine was given.

From our clinical observations and impressions we cannot confirm the idea many have held, namely, that opium and pantopon exert more of a sedative and analgesic effect on patients than the amount of morphine contained in them. While the pantopon series was being run, it was the continual complaint of the nurses that the pantopon would not "hold them." This was more true of patients after a cholecystectomy than after an appendectomy or herniotomy, as might be expected.

One thing that impressed us strongly was the accumulative effect of  $\frac{1}{2}$  grain (20 mg) doses of pantopon given every four hours. Two middle aged women given such doses of pantopon following a cholecystectomy over a period of three days reached such a state of narcosis that respiratory stimulants were necessary.

It did not seem to us as we saw these patients from time to time that  $\frac{1}{2}$  grain (20 mg) doses of pantopon had any advantages over  $\frac{1}{6}$  grain (10 mg) doses of morphine. In this connection it is interesting to note that pantopon costs approximately four times as much as morphine.

**Dilaudid**—Dilaudid (hydromorphone hydrochloride) is a synthetic derivative of morphine, made by the substitution of a ketoradical for an alcoholic-hydroxyl group. It was introduced into therapeutics by Gottlieb.<sup>8</sup>

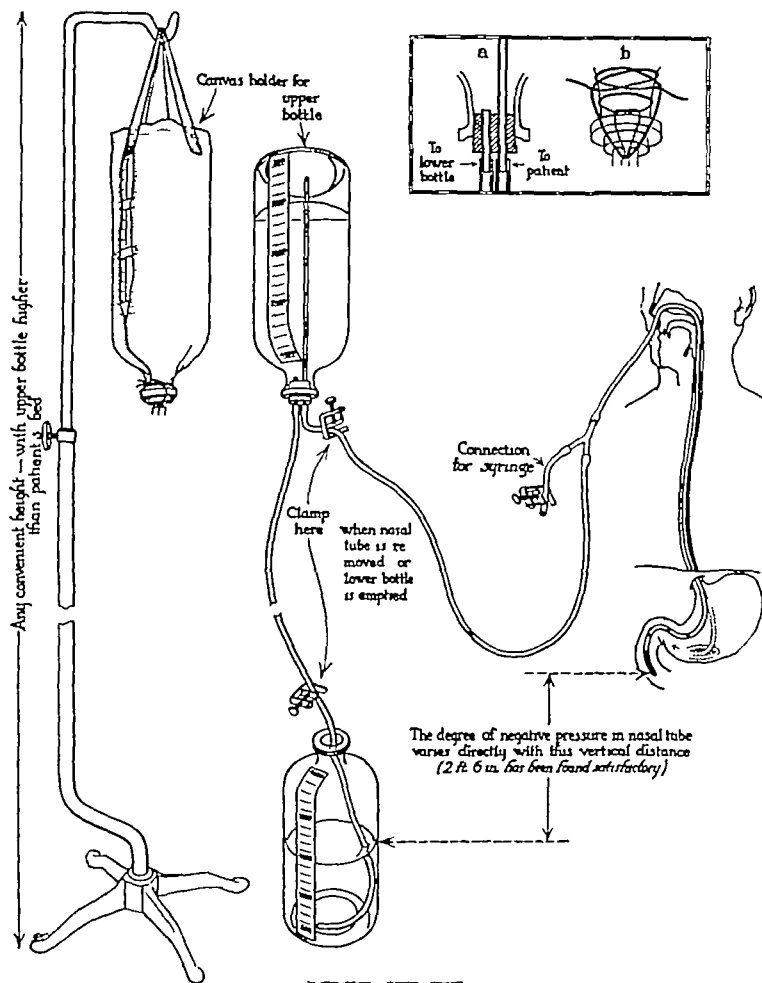


Diagram of suction apparatus used in treating postoperative distention, nausea and vomiting. Instead of the upper bottle being suspended from a standard it may be placed upright on a table or stand provided the tube leading to the lower bottle is attached to the longer glass tube instead of to the shorter one.

animals. Gruber and Robinson,<sup>7</sup> in 1929, found in their experiments on dogs that pantopon increased the muscular tone of the ileum and in general had the same effects as morphine except that they were not as pronounced. Several authorities contend that pantopon is only as effective as the amount of morphine which it contains, but the drug still has its advocates who claim

5 Barth Otto. Ein Beitrag zur Wirkung der Opium Alkaloide unter besonderer Berücksichtigung des Pantopons. Arch. f. exper. Path. u. Pharmacol. 70: 258-292, 1912.

6 Schwenter J. Verdauungsversuche mit Opium und Opiumderivaten bei der Katze kontrolliert durch die Einzenschlagaufnahme. Arch. f. phys. Med. u. med. Techn. 7: 23-30, 1912-1913.

7 Gruber C. M. and Robinson P. L. The Intestinal Activity in Unanesthetized Dogs as Influenced by Morphine and Papaverine. J. Pharmacol. & Exper. Therap. 37: 101 (Sept.) 1929.

8 Gottlieb R. Vergleichende Messungen über die Gewöhnung des Atmenzentrums an Morphin Diodid und Dilaudid. Munchen. med. Wchnschr. 73: 595-596 (April 9) 1926.

in 1926, who carried out experiments with it on rabbits. His experiments tended to show that, while much more powerful than morphine in its analgesic action, tolerance was very difficult to build up.

Subsequent literature on the subject is scanty. Seeliger<sup>9</sup> maintains that it has less effect on the bowels than has morphine. Dixon and Tiffeneau<sup>10</sup> certify as to its analgesic properties. They think it resembles heroin in its actions except that, judged by withdrawal symptoms, it causes little or no euphoria. Alvarez,<sup>11</sup> on the basis of the literature and clinical use, maintained that its analgesic effect is five times that of morphine, that it is less conducive to sleep than morphine and that euphoria is much less marked. Its effects as far as nausea, vomiting and respiration are concerned are uncertain. Habituation has not been observed so far. [A personal communication indicates that Dr Alvarez, considering these statements somewhat excessive, now withdraws largely from these views.—Ed.]

We studied the effects of this drug after operation in a series of nineteen cases to determine whether it had any qualities superior to those of morphine. The cases were divided as follows: cholecystectomy, five cases; appendectomy, seven cases; inguinal hernia, three cases; exploratory laparotomy, two cases; miscellaneous, two cases.

The experience with this drug in fifteen of the cases is given in table 1. In this small series the drug was found to be effective in controlling postoperative pain in doses of  $\frac{1}{32}$  grain (2 mg) every four hours, but it was not found to be superior to morphine in decreasing the incidence of distention, nausea, vomiting or gas pains. The only untoward effect noted was a slowing of respiration to from 10 to 12 per minute in an occasional case. A marked slowing of respiration occurred in one of our cases. A girl, aged 18 years, was operated on for acute appendicitis. The anesthetic used was an intraspinal injection of procaine hydrochloride crystals. She left the operating room in good condition and was given  $\frac{1}{32}$  grain (2 mg) of dilaudid about an hour and a half afterward for pain. Between one and two hours later her respirations fell to 10 per minute. Dilaudid was discontinued.

In two of the cases here reported, slowing of respirations to 12 or 13 per minute occurred after one or two doses of dilaudid. This was not interpreted as being an accumulative effect.

**Saline Cathartics**—As previously stated, varying the amount of morphine or substituting pantopon or dilaudid for morphine after operations affected constipation but little. It may logically be asked whether postoperative patients would not be more comfortable and have less nausea, vomiting, distention and gas pains if the bowels were not constipated.

Realizing that there was no generally accepted opinion on the subject, we undertook to see what effect small amounts of magnesium citrate given frequently from the first postoperative day would have. Patients were asked to drink from 350 to 700 cc of chilled magnesium citrate solution every twenty-four hours for from four to five days after operation (350 cc taken at once is the usual therapeutic dose). Morphine was given for pain when required. Patients complained of this treatment so bitterly that it was abandoned as not a feasible procedure. The chief complaint was the taste

After a certain quantity had been consumed, the solution seemed to make the patients nauseated. In several instances the diarrhea which it produced caused the patients so much discomfort and inconvenience that they refused to take more of it. Records were kept, however, on five patients who were prevailed on to carry the experiment through. The cases included one cholecystectomy, one appendectomy and three operations for inguinal hernia. All these patients were troubled with nausea and vomiting. In all but one case, in which an inguinal hernia had been operated on, diarrhea developed on the third or fourth day. The patient who had no diarrhea was given 450 cc a day for the first three postoperative days. He had no bowel movements until the seventh postoperative day and experienced no distention. The other two hernia cases presented slight distention on the third and fourth postoperative days. The appendectomy and the cholecystectomy cases did not present distention.

The only deductions we could make from these five cases which were carefully observed was that, while probably not a feasible procedure, because of its nauseating effect, magnesium citrate given in large quantities immediately after operation would relieve the postoperative constipation.

#### THE USE OF NASAL CATHETER SUCTION SIPHONAGE IN THE POSTOPERATIVE PERIOD

Gastric lavage is probably as old as abdominal surgery, for it became a common procedure after the recurrent stomach tubes of Auerbach and Ploss were developed in 1870, and frequent reference was made to it during the last twenty years of the nineteenth century.

When Einhorn and his contemporaries developed the duodenal tube and duodenal intubation during the first decade of the twentieth century, the way was opened for further application of the principles inherent in gastric lavage. However, it was not until 1921, when Levin developed the catheter tipped nasal tube, that duodenal intubation came to play an important part in the postoperative treatment of surgical patients. In 1925, Robertson Ward<sup>12</sup> described the use of constant suction in conjunction with the Levin duodenal tube. The latest development has been the use of constant suction with a Levin duodenal tube in decompressing certain types of acute mechanical intestinal obstruction, as described by one of us.<sup>13</sup>

**Physiologic Considerations**—Aspiration or lavage of the stomach for continued postoperative nausea and vomiting has long been common practice among abdominal surgeons. The contributions of McIver and his associates<sup>14</sup> on the origin of the gaseous intestinal distention after abdominal operations have adequately established swallowed air as the chief offender. The motility of the intestine being temporarily impaired, the swallowed increments of air accumulate in the intestine and distend it. Whereas the enema is an older tradition than the stomach tube, it is not surprising that

<sup>12</sup> Ward, Robertson. An Apparatus for Continuous Gastric or Duodenal Lavage. *J A M A*, 84:1114 (April 11) 1925.

<sup>13</sup> Wangenstein, O. H. The Early Diagnosis of Acute Intestinal Obstruction with Comments on Pathology and Treatment. With a Report of Successful Decompression of Three Cases of Mechanical Bowel Obstruction by Nasal Catheter Suction Siphonage. *West J Surg*, 40:117 (Jan) 1932. Therapeutic Considerations in the Management of Acute Intestinal Obstruction (abstr.) *Minnesota Med*, 15:556 (Aug) 1932. Therapeutic Considerations in the Management of Acute Intestinal Obstruction. The Technique of Enterostomy and a Further Account of Decompression by the Employment of Nasal Catheter Suction Siphonage. *Arch. Surg.*, June 1933.

<sup>14</sup> McIver, M. A., Benedict, E. B. and Cline, J. W. Jr. Postoperative Gaseous Distention of the Intestine. *Arch. Surg.*, 13:588 (Oct.) 1926.

<sup>9</sup> Seeliger, P. Ueber ein neues Morphinderivat. *Wien, klin. Wchnschr.* 40:495 (April 14) 1927.

<sup>10</sup> Dixon, W. E. and Tiffeneau, M. The Heroin Habit. *Lancet*, 2:55 (July 4) 1931.

<sup>11</sup> Alvarez, W. C. Dihydromorphine Hydrochloride, Dilaudid. *Bilhuber Knoll Proc. Staff Meet. Mayo Clin.* 7:480 (Aug 17) 1932.

this agent is generally more highly valued and more commonly employed in the management of postoperative distention by surgeons than is its younger rival, the duodenal tube. As the chief source of postoperative distention is swallowed air, attempts at obviating its occurrence at the source would logically follow as a reasonable act. It is also immediately apparent that the continuous employment of the duodenal tube should be more effectual than its periodic use, and that a mild suction constantly applied would be more efficacious than employment of a tube as a mere siphon. The latter postulate may be found readily demonstrated in the use of a Mariotte<sup>14a</sup> bottle which simulates the action of a siphon but which also permits of the collection of the aspirated fluid and gas. The details of this proof will be published elsewhere. Suffice it here to say that when the duodenal tube has been in place for some hours as a siphon, attached to a Mariotte bottle, almost invariably when suction was added, fairly large aspirations were immediately obtained. With suction, the stomach may be kept continuously empty.

The end of the catheter not uncommonly finds its way into the duodenum, in consequence, we have found it advantageous to have extra holes cut in the duodenal tube as far back as 10 inches proximal to the tip. The passage of the catheter into the intestine has been found to be a very desirable feature in that suction may be simultaneously and continuously applied to both stomach and bowel. There being no sphincters between the pyloric canal and the cecum, one may readily demonstrate to one's satisfaction on the intact dog or in the human intestine excised at necropsy, in the presence of induced distention of the intestine with either water or air, that suction applied at one end is appreciated in the same degree at the other. When a mixture of fluid and gas is present, however, the problem well known to physicists, whether dealing with rigid or elastic tubes, comes into play. In the presence of an established intestinal distention of a mixed gaseous and fluid character a slow decompression with constantly applied suction is to be anticipated even when the catheter projects beyond the pyloric sphincter. Another difficulty is the engagement of the walls of the intestine in the holes of the duodenal tube. We have employed about 75 cm. of water suction, which figure we believe lies within the range of optimal values.

A turbulent intestine with active peristaltic and antiperistaltic movement, as is present in bowel obstruction may undoubtedly be decompressed by suction with greater facility than the inactive bowel of postoperative distention. Our experiences with decompression by suction in cases of acute mechanical intestinal obstruction have been previously reported.

In established intestinal distentions of a mixed fluid and gaseous nature, one favorable factor affects the issue. With the oral source for accretion of distention cut off by suction constantly applied to the stomach as well as the duodenum, the lapse of time permits of some readjustment of the relative positions of gas and fluid, facilitating their removal. Postural changes of the patient and gentle abdominal massage may also be employed in an attempt to alter the gas and fluid relationships. In addition, the intestine, like all other hollow viscera, has a great capacity for accommodating itself to various grades of distention without manifesting considerable alteration in tension. No augmenta-

tion of the distention occurring, the process of fluid absorption intervenes to simplify the problem.

**Fluid Administration** In the withdrawal of fluid from the stomach and upper reaches of the intestine, it is obvious that fluid replacements will have to be made to compensate for the aspirations. The oral intake of postoperative patients on suction has been limited to 2,000 cc. a day, in the belief that large oral intakes will enhance the chloride loss. By quantitative determinations we have found that when 2,000 cc. of oral fluid is given patients approximately 15 Gm. of chloride expressed as sodium chloride will be aspirated by the duodenal tube. When 4,000 cc. of oral fluid is given, the loss is approximately 35 Gm. (In acute mechanical obstructions to be decompressed by suction, no oral intake is permitted.) Any clear liquid may be permitted, such as water, grape juice, strained orange juice, or tea. Milk or ice cream cannot be permitted as long as suction is in force, because they clot in the stomach. Fairly generous amounts of physiologic solution of sodium chloride are given subcutaneously and 5 per cent dextrose in saline solution intravenously (from 2,500 to 4,000 cc.) The best guide as to how much fluid should be given is the urine output. A daily twenty-four hour urine excretion of from 800 to 1,000 cc. indicates that the fluid intake is adequate. Dechlorination of the patient need not be feared if the urine output is adequate.

**Employment in Postoperative Period** A detailed description of the suction apparatus by which we have maintained constant negative pressure in the upper gastro-intestinal tract together with the technic to be employed in using the Levin duodenal tube in this connection may be found elsewhere.<sup>15</sup> We are here concerned primarily with the results obtained in treating postoperative cases by this method.

No attempt is made in postoperative cases ordinarily to intubate the duodenum with the tube. When suction is not commenced, however, until distention is established, quicker decompression may be assured if the tube can be made to enter the duodenum.

The length of time required to employ the duodenal tube varies, of course, with the individual cases. It has been found by experience, however, that in the usual case before removing the tube it is best to clamp the duodenal tube at intervals during the day and at the same time allow the patient to take oral fluids. In this way the ability of the patient to do without suction may be tested.

The usual procedure is to clamp the tube for an hour and a half out of every two hours. During this time the patient is urged to drink fluids. If under this regimen the patient experiences no discomfort over a period of from eight to twelve hours, the tube can probably be removed with reasonable assurance that he will experience no further trouble.

This procedure has been found useful in a variety of conditions in which the motility of the intestinal canal is impaired, alternate suction and feeding being done through the tube, which may be left in place for a relatively long time. Our experience with the use of nasal catheter suction siphonage in postoperative treatment up to the present time includes more than 500 cases. The impressions and conclusions that we have derived from the series of cases studied in detail and here presented have been fully borne out by our clinical observations on this larger series.

14a Edme Mariotte French physician and physicist born 1620 died 1684

15 Wangensteen, O. H. and Paine, J. R. Nasal Catheter Suction Siphonage Its Uses and the Technic of its Employment *Minnesota Med.* 16: 96 (Feb.) 1933

Detailed daily observations were made on thirty-eight consecutive abdominal cases, five miscellaneous cases were observed similarly as a control. The results that are presented in table 3 include only the abdominal cases.

In most instances, suction was begun as soon as the patient returned from the operating room, but in a few some hours elapsed before this was done. In most of the cases studied in this series operation was performed with spinal anesthesia. In a few instances nitrous oxide or ethylene was used as a supplementary anesthesia. The length of time suction was maintained after operation varied somewhat with the type of case. In general, it was used for three days in the herniotomies and appendectomies. Following operation on the biliary tract, suction was frequently maintained for four days and after intestinal or gastric operations for five or six days. (All patients were given morphine when required for relief from pain.)

Our experience with the employment of nasal suction in the treatment of established distention as well as its prophylactic use has indicated to us the importance of stasis in the stomach and upper intestinal canal as prob-

TABLE 3—*Effect of Nasal Suction on Distention, Nausea and Vomiting*

	Cases		Degree			
			0	1	2	3
Herniotomy	7	Distention	6	1	—	—
		Nausea	5	2	—	—
		Vomiting	5	2	—	—
Operations on biliary tract	9	Distention	7	2	—	—
		Nausea	5	4	—	—
		Vomiting	5	4	—	—
Appendectomy	10	Distention	9	1	—	—
		Nausea	5	5	—	—
		Vomiting	7	3	—	—
Gastric cases	6	Distention	6	—	—	—
		Nausea	4	2	—	—
		Vomiting	4	2	—	—
Intestinal cases	6	Distention	6	—	—	—
		Nausea	3	3	—	—
		Vomiting	2	4	—	—

ably the most significant factor in the genesis of postoperative vomiting. Its value in the control of vomiting and distention of peritonitis will be made the subject of a separate report.

Charts similar to those used for the morphine series were employed on which daily observations were set down. Particular attention was paid to nausea, vomiting and distention. These cases were divided as follows: operations for hernia, seven cases; operations on the biliary tract, nine cases; operations for appendicitis, ten cases; operations on the stomach, six cases; operations on the small intestine, six cases; miscellaneous, five cases.

The study includes seven postoperative herniotomies. Five of these were inguinal hernias and two were incisional hernias. Three of the patients with inguinal hernias experienced no nausea, vomiting or distention. In one of the remaining two inguinal herniotomies there was slight distention during the first day of suction and the other patient experienced slight nausea and had an emesis of 100 cc. One of the incisional hernia patients had no distention, nausea or vomiting. The other had some nausea and vomiting during the whole period of suction.

We studied nine patients who had operations performed on the biliary system. This group includes six cholecystectomies, two explorations with drainage of

the common duct and one cholecystoduodenostomy. Distention did not occur in any of the cholecystectomies. Four patients had no nausea or vomiting. The other two had a slight amount of nausea and vomited on one or two occasions. One of the common duct cases presented a slight amount of distention but no nausea or vomiting. The other presented no distention but some nausea and vomiting. The cholecystoduodenostomy case presented nausea, vomiting and distention, all in a mild degree.

Ten postoperative appendectomies are included. Eight of this number were for acute appendicitis. The other two were interval appendectomies. Both patients were slightly nauseated and one had an emesis of 300 cc. Four of the acute cases presented no distention, nausea or vomiting, whatever. One patient was markedly distended when suction was begun, but this became progressively less while suction was continued. This patient experienced no nausea or vomiting. In the remaining three cases, distention did not occur but the patients were all nauseated and two of them had emeses of 50 and 100 cc, respectively.

The six gastric cases include two gastro-enterostomies, two gastric resections and two subtotal gastric resections. None of these patients experienced distention during the period of suction. Of the whole number, only two (following a gastro-enterostomy and a gastric resection) were nauseated and vomited.

The intestinal cases include closures of three fistulas, one sigmoid resection, one intussusception and one perforated duodenal ulcer. The patient with the perforated duodenal ulcer had no distention, nausea or vomiting. The intussusception occurred in an 18 months old baby. The infant had emesis totaling 240 cc during a two-hour period shortly after operation. The vomiting was evidently due to the nasal tube being plugged, because after it was cleaned she experienced no further trouble and had an uneventful convalescence. The patient who had a sigmoid resection had no distention but was slightly nauseated and vomited on two occasions. None of the patients having closures of fecal fistulas were distended, but two experienced both nausea and vomiting of slight extent.

By studying table 3 it is easily seen that postoperative distention was almost entirely eliminated by the employment of nasal suction. Only four patients out of thirty-eight had any distention that we could determine clinically. Only one of these had more than a very slight amount. The incidence of nausea and vomiting parallel each other closely and is greater than the incidence of distention. Many of the patients shown as having nausea and vomiting were nauseated for only a few minutes or vomited only once. Others were completely relieved when the duodenal tube was readjusted. If table 2 is compared with table 3 it can be seen how much better off these patients were as a whole than patients not treated with nasal catheter suction-siphonage.

The results following gastric operations should be mentioned in particular. More consistent comfort and benefit from the procedure seems to be derived in these cases than in any other type. One of our patients had a partial gastric resection for a recurrent chronic peptic ulcer. He had had elsewhere three previous operations on the stomach without nasal suction and was in a good position to judge of its merits. On the third postoperative day he was asked what he thought of the nasal tube. His reply was, "I never knew any one could have an operation on his stomach and be so comfortable."

As previously stated the Levin duodenal tubes, which we employ at the present time in treating postoperative patients with nasal catheter suction siphonage, have the perforations at the tip continued back some 9 or 10 inches. The tubes used on some of the patients in the earlier part of this series were not so cut, and we thought that this might account for the occurrence of some of the nausea, vomiting and distention, as suction was not simultaneously exerted on the stomach and the intestine.

In order to confirm this impression, eleven additional postoperative cases were treated with duodenal tubes in which the perforations were continued back from the tip for 9 or 10 inches. These eleven cases included four cholecystectomies, three appendectomies, one nephrectomy, one repair of an incisional hernia, one colostomy and one lysis of intestinal adhesions followed by the establishment of pneumoperitoneum.

These patients were all operated on under spinal anesthesia (procaine hydrochloride crystals). In four cases the spinal anesthesia was reinforced by ethylene-ether.

Suction was started immediately after operation or as soon as the patient regained consciousness and was discontinued in most instances after forty-eight hours. For the first twenty-four hours constant suction was maintained, but during the second twenty-four hours it was shut off for an hour and a half out of each two hours. The patients were given 2,000 cc. of clear strained oral fluid each day.

The results were as follows. None of eleven patients exhibited any distention whatever that could be determined clinically during their convalescence. Three of the patients were either nauseated or vomited. A cholecystectomy was performed on a man, aged 43, for chronic cholecystitis. During his second postoperative day he experienced some nausea when the tube was clamped. He experienced no trouble, however, during the rest of his convalescence. An incisional hernia following a cholecystectomy was repaired in a woman, aged 55. She was distressed by some nausea during the first forty-eight hours after operation and had one emesis of 150 cc. Except for this, her convalescence was uneventful. A woman, aged 33, suffering from chronic partial intestinal obstruction had an intestinal lysis and pneumoperitoneum performed. Suction was continued in this case for four days. During this period the patient became nauseated four times and had three emeses, which totaled 600 cc.

The results in these eleven patients would seem to indicate that the employment of duodenal tubes with multiple perforations will decrease the incidence of nausea and vomiting but not entirely eliminate them.

**Constipation.** Postoperative constipation is not affected to any appreciable degree by nasal suction. There are also several factors operative in its causation which are not influenced by decompression of the upper gastro-intestinal tract. Neither can suction be said to be an effective treatment or prophylactic for "gas pains." They still occurred and, though their incidence may be somewhat less, "gas pains" cannot be wholly controlled by suction.

Enemas are rarely needed in the postoperative period when suction is used. Previously, we ordered a soap-suds or Noble's enema on the third postoperative day as a routine and frequently repeated this on subsequent days, until the bowels were moving normally. By using suction, the patient suffers little or no distress, and

enemas are given only if the patient fails to have a bowel movement after five or six days.

**Amount of Gas and Fluid Aspirated.** In this connection it is interesting to note how much gas is removed from the gastro-intestinal tract by the duodenal tube. The source of this gas is largely swallowed air and is naturally subject to a good deal of variation. Following appendectomy and herniotomy, about 2,000 cc. of gas is aspirated daily. Following operations on the biliary tract, some 3,000 cc. is removed, and after gastric operations the daily gaseous recovery is about 3,500 cc. These figures are averages for the cases observed.

The fluid aspirated by the duodenal tube corresponds in quantity rather closely to the amount of oral fluid given and varies with the degree of intestinal paresis present. The fluid drainage following appendectomy and herniotomy is about 1,800 cc. a day, following operations on the biliary tract it is about 1,500 cc., and following gastric operations, about 3,000 cc. These figures hold only for oral intakes of no more than 2,000 cc. a day.

**Indications for Use of Suction.** The question that logically arises is: What are the indications for using nasal catheter suction-siphonage postoperatively? Several factors must be considered. One is the discomfort caused the patient by the nasal tube. In general, this is slight. Another is that many patients undergo operations within the abdomen and experience little postoperative discomfort that would be relieved by suction. Another point to be remembered is that while nausea and vomiting can usually be relieved by suction after they occur, distention of the parietic intestine is more easily prevented than relieved after it becomes established.

At the Minnesota General Hospital we use the method quite as a routine after all operations on the biliary tract, the stomach and the intestine. After simple appendectomies and herniotomies it is used only if during the postoperative period the patient suffers unduly from distention, nausea or vomiting. It is frequently employed following kidney operations and appears to be an effectual agent in the treatment of intestinal distention of many diverse origins. In the reflex ileus accompanying many infections, nasal suction is of value in controlling intestinal distention. In instances of diffuse peritonitis of appendiceal origin, we employ the conservative nonoperative treatment and find that nasal suction is of value in preventing or reducing established distention. In fractures of the pelvis followed by intestinal distention and in injuries of the spinal column associated with injury of the spinal cord and attendant intestinal distention, nasal suction has proved of great value. Many instances of simple mechanical obstruction of the small intestine, especially of the adhesive type, whether of remote or recent origin, can be decompressed by nasal suction alone without operation.

#### CONCLUSIONS

1 Morphine neither prevents nor relieves abdominal distention, nor is it an important factor in its production.

2 No factors prejudicing the employment of adequate doses of morphine for the control of pain have been revealed by our studies.

3 The optimum dosage of morphine for postoperative patients is determined by the amount necessary to relieve pain adequately and lies probably somewhere between the dosages used in our two series.

4 Pantopon used postoperatively shows no marked advantages over morphine.

5 Dilaudid, while effective in relieving pain, shows no marked advantages over morphine if used postoperatively. It occasionally depresses respiration markedly.

6 Saline cathartics (magnesium citrate) used immediately after operation are effective in relieving constipation but are not recommended because of their other disturbing effects.

7 Nasal catheter suction-siphonage used postoperatively is an effective method of increasing the patient's comfort and reducing the postoperative incidence of distention, nausea and vomiting. Its use also practically precludes the necessity of administering enemas in the early postoperative period.

8 Nasal catheter suction-siphonage is recommended for routine use after operations on the biliary tract and the stomach and after plastic and anastomotic types of operations on the intestine. It may also be employed with benefit in instances of established intestinal distention of an inhibitive (paralytic) character.

## AGRANULOCYTIC ANGINA

### TREATMENT BY THE USE OF PARENTERAL AND ORAL LIVER EXTRACT: PRELIMINARY REPORT

FRANCIS L. FORAN, MD

HOWARD M. SHEAFF, MD

AND

RALPH W. TRIMMER, MD

Assistant Clinical Professors of Medicine, Rush Medical College  
CHICAGO

The syndrome described by Schultz<sup>1</sup> under the term of agranulocytic angina, and more recently known as malignant neutropenia<sup>2</sup> or pernicious leukopenia,<sup>3</sup> still presents a grave, acute medical emergency for which no highly satisfactory treatment has yet been finally demonstrated.

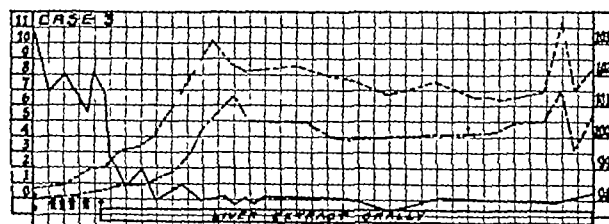
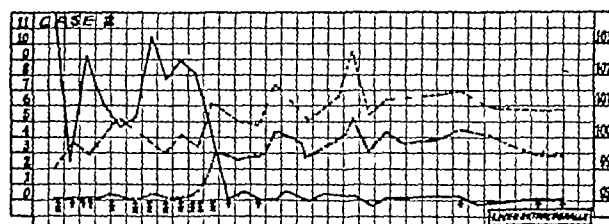
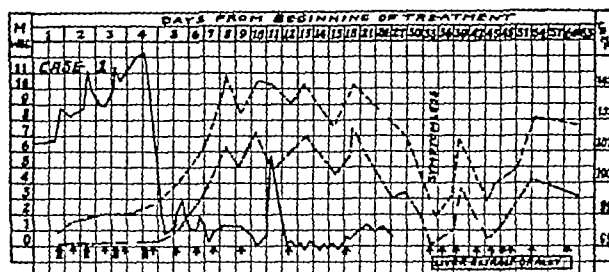
Doan<sup>2</sup> gives the mortality of the untreated cases at 90 plus per cent, of those treated by blood transfusions, at 64 per cent, and of those treated by roentgen irradiation, at 53 per cent. Jackson and his associates<sup>4</sup> report a corrected mortality rate of 30 per cent for the pentose nucleotides, in which deaths during the first seventy-two hours of treatment and cases otherwise inadequately treated are excluded. One of us<sup>5</sup> reported a case in which the treatment of this disease by the intravenous administration of liver extract was followed by recovery. We are now engaged in further study of this therapy and present these five cases as a preliminary report.

A leukopoiesis following the parenteral injection of liver extract has been noted by Murphy,<sup>6</sup> Connery and

Goldwater,<sup>7</sup> and Conner<sup>8</sup> in their studies on pernicious anemia. These observations, together with the widely current view<sup>9</sup> that malignant neutropenia is primarily a disease characterized by a defective function of bone marrow, furnish the logical basis for the use of liver extract in treatment.

### METHOD OF TREATMENT

The parenteral extracts used were commercial preparations of the fraction G of Cohn. Our usual procedure was to inject the equivalent of 100 Gm of liver into the vein or muscle every eight to twelve hours until a definite rise in the total white and the granulocyte count or a marked clinical improvement occurred. We preferred the intravenous route for the more acute stages. When thus used, the extract was usually diluted to a volume of 20 cc with distilled water and at



Solid line temperature broken line leukocytes dot dash line granulocytes plain arrow intramuscular liver extract barred arrow intravenous liver extract.

least five minutes was consumed in the injection. In the less acute stages, the intramuscular or oral route was used. After recovery, a dosage of liver adequate to maintain a normal leukocyte level was continued.

### REPORT OF CASES

CASE 1—S. R., a woman, aged 44 whose initial attack has been reported<sup>5</sup> was examined in December, 1931, at which time the red blood cells numbered 4,350,000 the white blood cells, 2,200, with polymorphonuclears 14 per cent. Recovery followed the intravenous administration of liver extract. There was a recurrence of the condition in July, 1932 when the red

From the Department of Medicine, Rush Medical College, the University of Chicago.

1 Schultz, Werner. Ueber eigenartige Halskrankungen. Deutsche med. Wchnschr. 48:1495 (Nov. 3) 1922.

2 Doan, C. A. The Neutropenic State, Its Significance and Therapeutic Rationale. J. A. M. A. 99:194 (July 16) 1932.

3 Fitz Hugh Thomas, Jr., and Krumbhaar, E. B. Myeloid Cell Hyperplasia of the Bone Marrow in Agranulocytic Angina. Am. J. M. Sc. 183:104 (Jan.) 1932.

4 Jackson, Henry Jr., Parker, Frederic Jr., and Taylor, F. H. L. Studies of Diseases of the Lymphoid and Myeloid Tissues. VII. The Nucleotide Therapy of Agranulocytic Angina, Malignant Neutropenia and Allied Conditions. Am. J. M. Sc. 184:297 (Sept.) 1932.

5 Foran, F. L. Agranulocytic Angina. A Case Report of Recovery Following Treatment by Intravenous Injection of Liver Extract. Illinois M. J. 61:521 (June) 1932.

6 Murphy, N. P. The Parenteral Use of Liver Extract in Pernicious Anemia. J. A. M. A. 98:1051 (March 26) 1932.

7 Connery, J. E., and Goldwater, L. J. Parenteral Use of Liver Extract in Treatment of Pernicious Anemia. J. A. M. A. 98:1060 (March 26) 1932.

8 Conner, H. M. Injection of Liver Extract in the Treatment of Pernicious Anemia. J. A. M. A. 99:614 (Aug. 20) 1932.

9 Piersol, G. M., and Steinfield, Edward. Granulopenia with Especial Reference to Its Classification and Its Benign Types. J. A. M. A. 96:2151 (June 20) 1931. Roberts, S. R., and Kracker, R. L. Agranulocytosis. Ann. Int. Med. 5:40 (July) 1931. Harkins, Henry. Granulopenia and Agranulocytic Angina. J. A. M. A. 99:1132 (Oct. 1) 1932.

blood cells numbered 4 540,000 the white blood cells 900, there were no granulocytes. The course and treatment are indicated on the accompanying chart. During a period of seventeen months there have been observed two typical attacks of agranulocytic angina, one nearly complete and several lesser granulopenic stages without symptoms and two such stages with inflamed hemorrhoids. April 18, 1933 the white blood cell count was 8 450 with polymorphonuclears, 63 per cent. The patient is now clinically well.

CASE 2—E. S., a woman aged 39 had a symptomless leukopenia (4 550) in March, 1932. In January, 1933 following a tooth extraction an oral slough developed. At this time the red blood count was 4 160 000, white blood count 2 300, polymorphonuclears 8 per cent. The course and treatment are shown in the chart. The patient recovered. April 21 the white blood count was 6 450, with polymorphonuclears 58 per cent.

CASE 3—H. S. J., a woman aged 43 had a white blood count of 5 300 casually noted in January, 1931. In September, 1932 there was exhaustion and gingival ulcerations appeared. The red blood count was 4 000 000, the white blood count, 850 and no granulocytes. The course and treatment are charted. There was a mild recurrence in December 1932 at which time the white blood cells numbered 3 100, polymorphonuclears were 30 per cent. The patient recovered. April 15 1933 the white blood count was 8 200 with polymorphonuclears 84 per cent.

CASE 4<sup>10</sup>—J. D. K., a woman aged 56 entered the hospital Feb. 2 1933 in coma with ulcerations in the mouth and throat. This was her first attack. The red blood cells numbered 3,410 000 white blood cells 1 400, granulocytes were 17 per cent. The equivalent of 1 500 Gm of liver was given parenterally. February 3 to 12 the equivalent of from 200 to 300 Gm daily by mouth. February 4 to 27 February 2 and 15 500 cc of blood was transfused. The patient recovered. February 22, the white blood count was 5,200 granulocytes were 47 per cent. Second attack. The patient continued to be well for one month, taking oral liver extract daily. March 28 lobar pneumonia set in at which time the white blood count was 650. The patient died March 30. Parenteral liver was not given in the terminal illness.

CASE 5<sup>11</sup>—G. S., a woman aged 38 entered the hospital April 12, two days after onset of the illness with pharyngeal ulcerations and a temperature of 100 F. The red blood count was 3 800 000, white blood count 2,350 there were no granulocytes. The equivalent of 2 000 Gm. of liver was given parenterally, April 12 to 18 and the equivalent of 300 Gm daily by mouth, April 18 to the present. The patient was discharged April 23. April 21 the white blood count was 7 000 with polymorphonuclears, 54 per cent.

#### COMMENT

Remissions of the granulopenia followed the treatment by liver extract in all five cases. One patient died in a recurrence of granulopenia during an attack of lobar pneumonia, the other four remain clinically and hematologically well.

The resemblance of the leukocytic increase to the reticulocyte rise in pernicious anemia was very striking in four cases. A more sluggish rise occurred in case 4, this was the most toxic case of the series.

Obviously, the results of this brief series are not to be considered as adequate evidence of a specific effect of liver on the granulopenia of agranulocytic angina. We merely propose the further study of liver extract as a rational therapeutic experiment in this disease, which has such an obscure etiology and such a high mortality, and the treatment of which is so notoriously unsatisfactory.

1748 West Harrison Street.

## TUBERCULOUS MESARTERITIS WITH ANEURYSM OF THE FEMORAL ARTERY

REPORT OF A CASE

ELDEN C. BAUMGARTEN, M.D.

AND

MEYER O. CANTOR, M.D.

DETROIT

Tuberculous arteritis as the result of the direct extension from a tuberculous process to the small arteries in a body organ is not of sufficient clinical importance to merit reporting. These lesions are considered an integral part of the primary disease, whether it is tuberculosis of the lung, kidney or any other part of the body. Such lesions do not give rise to signs or symptoms per se, with the result that a diagnosis can not be made except by examination of the microscopic sections. An arteritis in these small visceral vessels in an organ the seat of tuberculosis is of no clinical importance, moreover, as such lesions do not alter the course of the primary disease.

The tuberculous invasion of an artery of moderate or large size, however, initiates a train of events that leads to the formation of distinct disease entities, which are often diagnosed clinically and which overshadow the primary lesion as a cause of death. Tuberculous caseating mediastinal or mesenteric glands that are the primary source of the disease may exist for years without causing marked symptoms, but, should these caseating glands by direct extension cause an involvement of the wall of the aorta, there is initiated a train of events that in a variable length of time terminates in the death of the patient.

The formation of aneurysms as a result of the bacterial invasion of the wall of an artery either by direct extension or as a result of a mycotic embolism has been known for many years. The first record of the production of an aneurysm as a result of the invasion of the vessel wall by the tubercle bacillus was in 1895, when Kamen<sup>1</sup> described the case of a soldier, aged 24, who had a chronic pulmonary tuberculosis and an acute military tuberculosis, the former caused an aneurysm of the ascending portion of the aorta just above the aortic cusps, by direct extension from the caseating mediastinal glands.

Since this first report by Kamen, twenty cases of aneurysm of medium sized and large arteries, the result of tuberculous invasion of the vessel wall, have been reported in the literature. Of these twenty cases however in only four was this tuberculous arteritis due wholly to the hematogenous dissemination of bacilli with the lodgment of tubercle bacilli in the media of the vessel wall, having passed through the vasa vasorum. The primary source of the tuberculous process was definitely known in all four cases. The embolic nature of the process was proved by the tuberculous involvement of the vessel wall alone with no vestige of any tuberculous process in the circumjacent tissue of the vessel involved.

#### PREVIOUS CASES REPORTED

The first of these cases reported was that of Pel of Amsterdam, as recorded by Lenoble<sup>2</sup> in 1922. Pel

10. For the opportunity to observe and report this case we are indebted to Dr. T. S. F. Johnson of Joliet, Ill.

11. For the privilege of reporting this case we are indebted to Dr. Frank B. Kelly of Chicago.

1. Kamen, L. Aortenruptur auf tuberkulöser Grundlage. Beitr. z. path. Anat. u. z. allg. Path. 17: 416, 1895.  
2. Lenoble, E. Arch. d. mal. du cœur 15: 677 (Oct.) 1922, quoted by Malcolm.

reported the case of a woman, aged 20, who died of an aneurysm of the superior mesenteric and femoral arteries, undoubtedly of tuberculous origin. The autopsy showed tubercles to be present on the mitral valve. Pel considered that the vascular lesions in this case were due to tuberculous emboli from the mitral valve.

The second case was that of Tozer.<sup>3</sup> This was a tuberculous aneurysm of the abdominal aorta which ruptured into the duodenum. In the media, which was very much thinned out, the elastic tissue was replaced by fibrous tissue filled with lymphocytes. The intima showed tuberculous granulations with numerous giant cells.

The third case was that of Brockman<sup>4</sup> in 1926. This was an aneurysm of the femoral artery in a boy, aged 14. Brockman considered his case to be one in which the tubercle bacilli were carried from a Pott's disease by means of the vasa vasorum into the media of the femoral artery, producing there the characteristic tuberculous lesion resulting in an aneurysm.

The fourth case was that of Malcolm<sup>5</sup> in 1928. A man, aged 72, had a femoral aneurysm that ruptured. The primary source of the tuberculous arteritis was a miliary tuberculosis of the lung. Malcolm was able to demonstrate acid-fast bacilli in the media. These acid-fast bacilli conformed to the size, shape and staining reactions of the tubercle bacilli, which he considered them to be. In addition to these bacilli there was extensive necrosis of all coats of the artery with numerous giant cells and lymphocytes. He considered the portal of entry to the arterial wall as being the vasa vasorum.

#### PATHOLOGY

The case we are reporting falls in the small group of four cases mentioned, in that there was definitely an involvement of the blood vessel walls, especially the media, solely as a result of the spread of tubercle bacilli through the vasa vasorum into the media, in which the tuberculous process was set up and caseation necrosis occurred, so weakening the vessel wall as to result in an aneurysm. It is recognized at the present time that the necessary antecedent of aneurysm formation is injury to the media of the vessel. Adventitia and intima lesions in themselves do not result in aneurysms. An atheromatous plaque in the intima in itself will not lead to an aneurysm, but if the pressure of the blood in the vessel is sufficient to push this plaque toward the media, compressing and weakening the media by breaking the elastic fibers holding the muscle fibers of the media together, then the stage is set for the appearance of an aneurysm at that point of medial weakness.

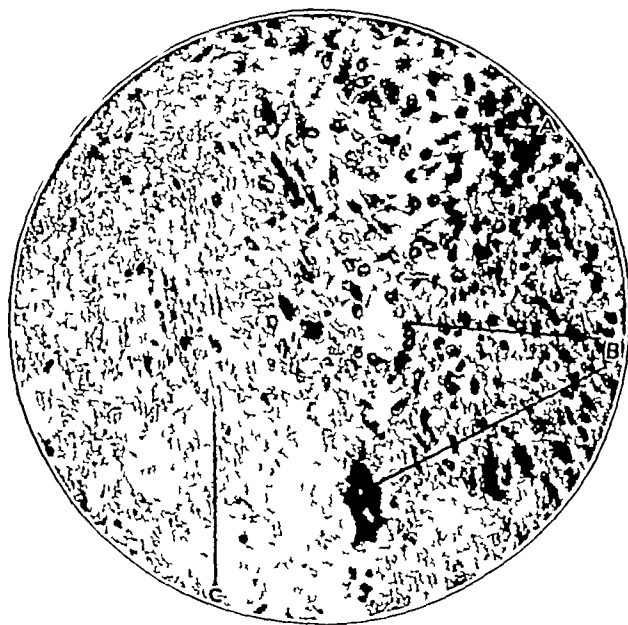
Our case differs from the four previously mentioned in that the primary source of the tuberculosis is unknown. It is possible that we have here a primary tuberculous mesarteritis. Time alone will reveal the primary focus of tuberculosis, if it is present.

#### REPORT OF CASE

**History**—A B, a white man, aged 53, seen at the Evangelical Deaconess Hospital, Nov. 20, 1929, complained of a painful swelling on the inner surface of the left leg above the knee, of three weeks' duration. The onset of symptoms occurred two

years previously. At that time there was pain in this region but no swelling. The pain was continuous. It was of two weeks' duration at that time. There was no history of trauma. The pain disappeared spontaneously and he remained perfectly well until three weeks before admission. At this time, in addition to the severe pain that occurred at the same site as two years before, a swelling made its appearance on the inner surface of the left leg above the knee. This swelling had slowly but progressively increased in size. He did not know whether there had been any fever during this time. At the time, the pain radiated down the left leg to the knee and to the calf of the leg.

**Examination**—The patient was well developed and apparently not acutely ill. He walked unsupported, but with a left-sided limp. There was a large swelling on the internal surface of the left thigh at the junction of the middle and lower thirds. The swelling was globular in form and measured about 7.5 cm in diameter. It was firm, with a suggestion of fluctuation at its lower border. The tumescence was not movable but did not seem attached to the femur. There was no bony tenderness along the course of the femur. The temperature on admission was 98.6 F. The white blood count was 8,700. A roentgeno-



Section of femoral artery. A lymphocytic infiltration. B giant cells caseating tubercle.

gram of the left femur showed a periostitis with what appeared to be a small area of osteomyelitis of the lower third of the femur. The roentgen diagnosis was osteomyelitis.

**Operation**—November 21, under ethylene-gas anesthesia and with a high tourniquet, a slightly curved incision was made over the upper part of the tumor. The muscles were retracted, exposing a globular tumor that had a fluctuant feel. This mass was not attached to the bone. It seemed to pulsate and was compressible, suggestive of an arterial aneurysm. A needle was introduced and liquid blood withdrawn. The tumor was opened. It was found to contain a large amount of liquid and clotted blood. This was removed. Many of the clots showed beginning organization, indicating that this false aneurysm or hematoma had been formed some time prior to the time of operation. The deepest part of the cavity appeared to be lined with endothelium, but this did not cover more than one fourth of the inner surface of the sac. On releasing the tourniquet, there was active arterial hemorrhage from two openings on the bottom of this sac. These openings were closed by catgut sutures, effectively controlling all bleeding. The wound was then packed with gauze and temporarily closed with silkworm gut sutures. The patient was in fair condition. We felt that this was an arterial aneurysm which had undergone spontaneous rupture with extensive hemorrhage into the surrounding tissue. We were not able to identify the vessel definitely but because

<sup>3</sup> Tozer, E. A. Arch. d. mal du cœur 8:312 1915 quoted by Malcolm.

<sup>4</sup> Brockman, E. P. Aneurysm of the Femoral Artery in a Patient with Pott's Disease of the Spine. Brit. J. Surg. 14:671 (April) 1926.

<sup>5</sup> Malcolm, R. B. Aneurysm Due to Tuberculosis with the Report of a Case of Tuberculous Aneurysm of the Right Femoral Artery. Canad. M. A. J. 19:33 (July) 1928.

of its rather small size and location believed it to be one of the smaller branches of the femoral rather than the femoral artery itself

*Postoperative Observations*—There was no bleeding after the operation

November 26 the packing was removed. There was no bleeding. A soft rubber drain was inserted and a pressure dressing applied to obliterate the cavity left by the packing

November 29, the soft rubber drain was removed. The wound was healing nicely. There was a small amount of purulent drainage. The silkworm gut sutures were removed

December 5, the patient noted the sudden appearance of fresh blood coming from the dressings. This very shortly became a brisk hemorrhage. He was taken to the operating room immediately. The wound was opened under gas anesthesia. It was found that the large cavity previously noticed was practically all filled in, leaving only a small sinus which barely admitted the forefinger. This sinus was tightly packed with one-half inch iodoform gauze and a pressure bandage applied. The patient's leg was elevated and put in a splint

December 11, the red blood count was 1,300,000, hemoglobin, 30 per cent. He had another moderate hemorrhage. We advised transfusion and amputation of the leg

December 12, he was given a transfusion of 500 cc of citrated blood by the indirect method

December 16 he was taken to the operating room, and under ethylene-gas anesthesia the left leg was amputated at the junction of the upper and middle thirds, under tourniquet, by the long anterior and short posterior flap method. His convalescence was uneventful. The wound healed well

December 30, the patient was discharged

At the present time, three years after the operation, the patient is ambulatory without any marked disability

*Pathologic Changes*—Grossly, the examination of the femoral artery revealed a rupture of an aneurysm at the middle third of the leg, producing a large hematoma in the tissue of the thigh. There was organization of many of the large blood clots. There was no gross evidence of disease about the artery

Microscopically, sections taken from the femoral artery at the point of rupture revealed numerous caseating tubercles with numerous giant cells. The nuclei of the giant cells were arranged like a wreath at the periphery of the cells. There was a marked lymphocytic infiltration. The several coats of the artery had become distorted by the tuberculous process. The most marked changes, however, were seen in the media of the vessel. It was here that the caseating tubercles and giant cells were particularly abundant. An examination of the photomicrograph taken of the section from the femoral artery shows exceptionally well the characteristic tuberculous lesions. The large caseating tubercle in the media is obvious. There are two giant cells also seen very well in the photomicrograph. There was an area of fibrosis in the region between the caseating tubercles and the lumen of the vessel. At this point there was a break in the continuity of the internal elastic lamina. No tubercle bacilli were found, as a Ziehl-Neelsen stain was not done

#### COMMENT

An interesting feature of this case is the observation that the aneurysmal dilatation caused an irritation of the periosteum of the femur with the result that a diagnosis of osteomyelitis was made by the roentgenologist because of the resulting periostitis

The first clinical sign detectable was the swelling of the thigh. At this time the aneurysm had already ruptured, with the formation of a false aneurysm or hematoma. This was the mass found at operation, and it was for this reason that the diagnosis was not made preoperatively as the thrill, bruit and murmur characterizing aneurysms was not noted. The almost complete localization of the tuberculous process to the media is very significant. That this case is an example of tuberculous arteritis as a result of the spread of tubercle bacilli through the vasa vasorum is unquestionably shown by the localization of the process pri-

marily to the media and the complete absence of any tuberculous process in the tissue sectioned about the artery. There is a question in this case as to the possibility of this being a primary tuberculous mesarteritis. However, that is a question which time alone will settle. We did not stain for acid-fast bacilli, as the microscopic report was wholly unexpected. The microscopic report was done by Dr. Plinn Morse

In the case reports of Haythorn<sup>6</sup> and in that of Malcolm, tubercle bacilli were actually demonstrated in the sections in the media of the vessel wall

#### SUMMARY

1 Tuberculous arteritis as an etiologic factor in the production of aneurysm is relatively rare, only twenty cases being found in the literature

2 The case here reported is the fifth in which the tuberculous arteritis was the result of transmission of tubercle bacilli through the vasa vasorum into the media of the vessel wall

3 The predominant tuberculous lesion was found in the media

4 Of the five cases of tuberculous arteritis as a result of transmission through the vasa vasorum, four of the cases involved the femoral artery

5 The primary focus of the tuberculosis has not yet been found in our patient. For this reason, a diagnosis of primary tuberculous mesarteritis is justified at this time

3528 Van Dyke Avenue—9014 Grand River Avenue.

## AMYL NITRITE AND CYANIDE POISONING

K. K. CHEN, PH.D., M.D.

CHARLES L. ROSE, B.S.

AND

G. H. A. CLOWES, PH.D.

INDIANAPOLIS

Methylene blue (methylthionine chloride U.S.P.) has been shown by Sahlin,<sup>1</sup> Eddy,<sup>2</sup> Brooks,<sup>3</sup> Hug<sup>4</sup> and Hanzlik<sup>5</sup> to antagonize the action of cyanide in animals, and recently it has been successfully used by Geiger<sup>6</sup> in the treatment of cyanide poisoning in a man. Hug<sup>4</sup> has demonstrated that sodium nitrite is a better antidote than methylene blue in dogs. He<sup>7</sup> and Wendel,<sup>8</sup> working independently, have offered a new view concerning the antagonism

We have investigated both methylene blue and amyl nitrite in cyanide intoxication and have found the latter to be more efficient than the former. The differences in the results appear to be so decisive as to merit a presentation to those who are interested in the subject. It should be understood that we make no claims to originality in this study but merely announce our con-

6. Haythorn S. R. Tuberculosis of the Large Arteries J. A. M. A. 60:1413 (May 10) 1913

From the Lilly Research Laboratories, Eli Lilly and Company

1. Sahlin B. Skandinav Arch f. Fysiol. 47:284 1926

2. Eddy N. B. J. Pharmacol. & Exper. Therap. 41:449 (April) 1931

3. Brooks Matilda M. Proc. Soc. Exper. Biol. & Med. 29:1228 (June) 1932. Am. J. Physiol. 102:145 (Oct.) 1932. Methylene Blue as Antidote for Cyanide and Carbon Monoxide Poisoning J. A. M. A. 100:59 (Jan. 7) 1933

4. Hug E. Compt. rend. Soc. de biol. 111:519 (Nov. 14) 1932

5. Hanzlik P. J. Methylene Blue as Antidote for Cyanide Poisoning J. A. M. A. 100:357 (Feb. 4) 1933

6. Geiger J. C. Cyanide Poisoning in San Francisco J. A. M. A. 99:1944 (Dec. 3) 1932. Methylene Blue as Antidote for Cyanide and Carbon Monoxide Poisoning. ibid. 100:59 (Jan. 7) 1933

7. Hug E. Compt. rend. Soc. de biol. 112:511 1933

8. Wendel W. B. Methylene Blue and Cyanide Poisoning J. A. M. A. 100:1054 (April 1) 1933. J. Biol. Chem. 100:c (May) 1933

firmation of Hug's and Wendel's work with a practical suggestion

Sodium cyanide-Merck, methylene blue-Merck, both reagent quality, and amyl nitrite-Lilly dispensed as pearls, each containing 0.3 cc., were used in our experiments. It was found that the minimal lethal dose of sodium cyanide in mice by subcutaneous injection varied from 8 to 14 mg per kilogram. In rabbits the minimal lethal dose was determined to be 22 mg and in dogs 6 mg per kilogram. Methylene blue given intravenously, in order to be effective in mice and rabbits, must be administered within a short time, ranging from five minutes before to one to two minutes after the subcutaneous injection of sodium cyanide. The maximal amount of the cyanide successively antagonized by methylene blue was twice the minimal lethal dose. In dogs, similar results were obtained when the dye, either in a single dose or by repeated injections, was introduced directly into the blood stream, as shown in the table. No animal was protected by methylene blue medication against three minimal lethal doses of the cyanide.

Signs that indicate immediate administration of amyl nitrite are rapid pulse, difficult breathing, muscular rigidity, sluggishness or absence of corneal reflex, and convulsions. In several dogs, we commenced to give amyl nitrite every three to five minutes approximately five to seven minutes following the injection of fatal doses of cyanide. This prevented the occurrence or at least reduced the number and severity of convulsions. Each inhalation lasted from fourteen to thirty-one seconds. During convulsions, however, it was sometimes prolonged to more than a minute. While the assumption of the formation of cyanmethemoglobin by Hug<sup>4</sup> and Wendel<sup>5</sup> for the mechanism of detoxication has a sound foundation, Hanzlik's suggestion made in discussing Wendel's paper at the Cincinnati meeting of the Federation of American Societies for Experimental Biology, that a cyanide antidote is of great value in the relief of convulsions and tremors, should be given due consideration. In our experiments on dogs, the preventive and prophylactic action of amyl nitrite against muscular rigidity and convulsions was very apparent. The frequency of amyl nitrite inhalation should be

*Comparison of the Antidotal Effect of Amyl Nitrite and Methylene Blue in Dogs*

Date of Experiment	Dog Number	Sex*	Body Weight, Kg	Sodium Cyanide (Subcutaneous)			Antidotal Medication		Ultimate Result
				Mg per Kg	M	L D	Drug	Dose	
1/16/33	1	♂	17.6	5	0.8		None	None	Recovered
1/16/33	2	♀	22.5	5	0.8		None	None	Recovered
1/16/33	3	♂	11.3	5	0.8		None	None	Died in 1 hr 50 min
1/16/33	4	♀	18.6	6	1.0		None	None	Died in 1 hr 50 min
1/18/33	5	♂	20.6	6	1.0		None	None	Recovered
1/18/33	6	♀	21.0	6	1.0		None	None	Died in 2 hr
1/20/33	7	♂	10.0	6	1.0		None	None	Recovered
1/20/33	8	♀	18.6	6	1.0		None	None	Died in 1 hr 43 min
4/20/33	9	♂	14.0	6	1.0		None	None	Died in about 3 hr 20 min
1/24/33	10	♀	9.6	6	1.0		Methylene blue	200 mg Intravenously	Recovered
1/13/33	11	♂	18.2	6	1.0		Methylene blue	200 mg Intravenously	Recovered
1/13/33	12	♀	14.8	0	1.5		Methylene blue	200 mg Intravenously	Recovered
1/23/33	13	♂	17.4	12	2.0		Methylene blue	200 mg Intravenously	Recovered
1/23/33	14	♀	10.2	12	2.0		Methylene blue	200 mg Intravenously	Recovered
2/7/33	15	♂	12.2	12	2.0		Methylene blue	200 mg Intravenously	Died in 12 hr
2/8/33	16	♀	10.0	12	2.0		Methylene blue	300 mg in 5 Intravenous injections	Recovered
1/13/33	17	♂	18.8	18	3.0		Methylene blue	200 mg Intravenously	Died in 2 hr 45 min
1/24/33	18	♀	14.5	18	3.0		Methylene blue	200 mg Intravenously	Died in 3 hr
2/9/33	19	♂	11.4	18	3.0		Methylene blue	550 mg in 9 Intravenous injections	Died in 3 hr 15 min
4/3/33	20	♂	12.8	12	2.0		Amyl nitrite	9 Inhalations	Recovered in 6 hr 7 min
4/4/33	21	♀	11.0	18	3.0		Amyl nitrite	11 Inhalations	Recovered in 11 hr 15 min
4/2/33	22	♂	12.6	18	3.0		Amyl nitrite	102 Inhalations	Recovered in 22 hr 45 min
4/5/33	23	♀	14.8	24	4.0		Amyl nitrite	21 Inhalations	Died after 12 hrs observation
4/6/33	24	♂	18.1	24	4.0		Amyl nitrite	16 Inhalations	Recovered in 21 hr 22 min
4/18/33	25	♀	12.5	24	4.0		Amyl nitrite	101 Inhalations	Recovered in 23 hr 1 min
4/11/33	26	♂	12.0	27	4.5		Amyl nitrite	25 Inhalations	Recovered in 26 hr 45 min
4/18/33	27	♀	12.0	27	4.5		Amyl nitrite	30 Inhalations	Died in 1 hr 47 min
4/6/33	28	♂	19.9	30	5.0		Amyl nitrite	12 Inhalations	Died in 3 hr 15 min
4/12/33	29	♀	9.4	30	5.0		Amyl nitrite	17 Inhalations	Died in 6 hr 30 min

\* The symbol ♂ denotes male ♀ female

By the inhalation of amyl nitrite, dogs can tolerate four minimal lethal doses of sodium cyanide, as shown in the table. One of the two animals that received four and a half minimal lethal doses also completely recovered. Those that died from larger doses of the cyanide seemed to have a tendency to survive longer when treated with amyl nitrite. Experimentally, the efficiency of this drug in antidoting cyanide poisoning is thus at least twice that of methylene blue, and it possesses the added advantage of being readily administered by the respiratory route.

With these laboratory data available, we believe the clinician is now justified in trying amyl nitrite inhalation in cyanide poisoning. The few observations made on animals, especially dogs, may possibly serve as useful guides in practice. The inhalation of amyl nitrite invariably changes the intoxication of sodium cyanide from a rapid to a protracted course. Continuous observation of the subject is of the utmost importance

reduced to once every thirty minutes and finally every two to five hours as the pulse and respiratory rates approach normal. A temporary improvement of the subject's condition after initial medication does not insure ultimate recovery or indicate discontinuance of observation. One of our dogs (23 in the table) when left alone died, after having been watched for twelve hours.

It may be suggested that a rational procedure in managing a case of cyanide poisoning based on animal experiments might consist of (1) immediate administration of amyl nitrite for from fifteen to thirty seconds, to be repeated every three to five minutes if the patient is unconscious and rigid, (2) gastric lavage at once if the poison is taken by mouth—preferably done by another physician for division of labor, (3) artificial respiration by hands in case of gasping while the administration of amyl nitrite is continued, (4) frequent counting of pulse and respiratory rates, and (5)

continuous observation of the patient for at least the first twenty-four hours. During convulsions, the inhalation of amyl nitrite may be prolonged to a minute or slightly longer. When respiration and heart rates show little or no abnormality, the administration of amyl nitrite should be reduced to once every several hours. To combat severe headaches that may occur, an analgesic with no depressive action on respiration may be employed.

Our study on other nitrites is in progress but a priori they offer disadvantages: the decomposition of an aqueous solution such as that of sodium nitrite, the explosive nature of organic nitrates, the necessity of repeated intravenous injections, and the risk of introducing into the circulation an overdose of a fixed drug. Unless a member of the same group proves to have a higher therapeutic efficiency, it seems better to use amyl nitrite which is rapid in action, easy to administer by inhalation, and readily available.

## CEREBELLAR HERNIATION INTO FORAMEN MAGNUM

A. E. BENNETT, M.D.

OMAHA

Any one who has performed a large number of cranial necropsies has been impressed with the frequent finding of a pressure cone of the cerebellum herniated into the foramen magnum in states of increased intracranial pressure. Every neurosurgeon likewise fears this condition and frequently finds the cerebellum wedged into the foramen magnum and extending down into the cervical subarachnoid space. The surgeon, as a matter of routine, taps the ventricle before exploration of the posterior fossa in order to prevent medullary paralysis from a jamming herniation.

Despite these common observations, very little information is available as to the clinical frequency of the complication or as to the symptoms and signs of cerebellar herniation. The literature is almost bare of clinical descriptions of this important complication of increased acute or chronic cerebral pressure syndromes. Only a few anatomic reports are to be found. Yet the herniation of the cerebellum into the foramen magnum, producing pressure paralysis of medullary cardiorespiratory centers, is probably the commonest immediate cause of death in cases of intracranial compression.

The need of more accurate diagnostic criteria for this syndrome has occurred to me, particularly for early or partial block of the foramen. By establishing an early diagnosis of impending block, one can often by appropriate therapy prevent the inevitable medullary paralysis.

In a number of cases in which I had suspected herniation, I found a disturbed pressure relationship on spinal or cisternal puncture, also in certain fatal cases in which herniation was later proved at necropsy. These observations have led me to believe that there are manometric signs indicative of this obstruction. While subarachnoidal punctures are technically contraindicated in these states of block, there are times when punctures are necessary. In other cases in which the condition is not suspected at the time of puncture, the block, if discovered, may be relieved by early treatment.

The earliest anatomic reports of cerebellar herniations I found between the years 1905 and 1911. Alquier<sup>1</sup> reported two cases of cerebellar herniation in brain tumor. Wolbach<sup>2</sup> reported multiple small hernias of the cerebrum and cerebellum into venous sinuses from the swelling of brain tumors but made no mention of larger herniations into the foramen magnum. Laignel-Lavastine<sup>3</sup> reported a case of cerebellar herniation into the vertebral canal, but he believed this to be a postmortem condition caused by intracranial injection of solution of formaldehyde under pressure. A tumor was not present in this case.

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There are numerous reports in the literature of sudden deaths following spinal or cisternal punctures and also sudden deaths in pressure states such as cerebellar cysts. A large percentage of these deaths can be analyzed as being the result of cerebellar wedging of the medulla with resultant paralysis. Reuter<sup>5</sup> reported a death occurring thirty minutes after a cisternal puncture that produced cerebellar herniation. Taylor<sup>6</sup> reported a case of posterior fossa tumor. The patient, following lumbar puncture, had a violent increase in headache, four days later, after a second puncture, sudden collapse, cyanosis and respiratory failure ensued. Artificial respiration was kept up until a temporal decompression could be performed, which somewhat relieved the patient, but three days later he died. At necropsy a cerebellar cyst with a pressure cone into the foramen magnum was found.

Knox<sup>7</sup> reported five cases of cerebellar cysts, three of which terminated in sudden death. Of these, one case in which necropsy was performed four days after a lumbar puncture showed a marked cerebellar herniation.

Reuben<sup>8</sup> described a series of cases with meningitic pressure syndromes of the posterior fossa, assumed to be localized cisterna magna pressure, as relieved by spinal drainage. But experience has shown the grave risk of such treatment.

Cisternal or spinal punctures are, therefore, always contraindicated in the pressure lesions of the posterior fossa, although often a diagnosis cannot be made without cerebrospinal fluid studies. Elsewhere I<sup>9</sup> have outlined cerebellar herniation as one of the contraindications and dangers of cisternal punctures.

1 Alquier M. Two Cases of Heterotopia of the Cerebellum in the Vertebral Canal. *Rev. neurol.* 13: 1117, 1905.

2 Wolbach S. B. Multiple Hernias of the Cerebrum and Cerebellum Due to Intracranial Pressure. *J. M. Research* 19: 153, 1908.

3 Laignel-Lavastine M. Postmortem Impaction of the Cerebellar Amygdala in the Vertebral Canal. *Compt. rend. Soc. de biol.* 70: 52, 1911.

4 Meyer Adolf. Herniation of the Brain. *Arch. Neurol. & Psychiat.* 4: 387 (Oct.), 1920.

5 Reuter, F. Ein Fall von plötzlichem Tode bei 7-stündiger Punktion. *Wien. klin. Wchnschr.* 30: 1275 (Oct. 28), 1926.

6 Taylor, C. E. Intracranial Pressure. *S. Lab. Med.* 4: 312 (Aug.), 1927.

7 Knox, Leila C. Sudden Death Associated with M. A. 95: 1813 (Dec. 13), 1930.

8 Reuben M. S. and Ch. Syndrome. *Arch. Pediat.* 47: 1930.

9 Bennett A. E. Diagnostic Cisternal Puncture. *J. A. M. A.* 85: 1930.

Keegan and I<sup>10</sup> have reported a case of cortical herniation into arachnoid granulations producing a thrombosis of the motor cortex and the larger pyramidal bodies from increased pressure and a cerebral aneurysm. In this case there was herniation of the cerebellum into the foramen magnum as the immediate cause of death.

So far the diagnostic value of Queckenstedt's sign, an absence of rise of pressure in lumbar puncture on bilateral jugular compression, has been limited to spinal subarachnoid block and the lateral sinus. The absence of response on compressing one jugular vein has been used to determine obstruction of the lateral sinus (Aver-Tobey, Queckenstedt). Several observers<sup>11</sup> have reported that tumors compressing the lateral sinus produced this sign. My investigation of the literature does not reveal any definite diagnostic signs for foramen magnum block.

Lurje<sup>11</sup> studied Queckenstedt's test in tumors of the posterior fossa. In a case of fourth ventricle tumor he found evidence of a partial block by compressing the jugular veins. With the patient's head flexed he developed a slight increase in pressure, but with the head hyperextended he found no increase in pressure with jugular compression. In other posterior fossa tumor cases he found three showing a positive Queckenstedt sign on one side, indicating a neoplasm in the region of the lateral sinus. He mentions the danger of compression of the cerebellum into the foramen magnum but does not describe any diagnostic localizing signs for block of the foramen magnum.

Kindler<sup>12</sup> described cisternal block and the various conditions in the posterior fossa that obstruct the cisterna magna, including compression of the cerebellar tonsils into the foramen magnum. He reports a case of tumor of the cerebellopontile angle which blocked the posterior fossa basilar cisterna. He localized the tumor by ventriculography after showing the block at the level of the cisterna magna by combined lumbar and ventricular punctures. He gave the characteristics of cisternal block as no fluid obtained by cisternal puncture, positive Queckenstedt sign, and increased protein content in the lumbar fluid. In the terminal stage he found extreme occipital headache associated with extreme opisthotonos and Cheyne-Stokes breathing. He believes that ventricular drainage which relieved the symptoms, is indicated in this type of case.

All these reports indicate the frequency of this important complication of increased intracranial pressure.

The following are cases that have been observed in the past few years by Dr G. A. Young, myself and other members of the staff of the University of Nebraska College of Medicine. These cases have served to impress on us the necessity of constantly considering the possibility of this serious complication of foramen magnum block in either acute or chronic increased intracranial states.

#### CEREBROSPINAL FLUID PRESSURE IN OBSTRUCTION OF THE FORAMEN MAGNUM

##### FATAL CASES OF MENINGITIS

CASE 1—*Post traumatic meningitis*. A young man was observed in the terminal stage of a pneumococcal meningitis following a skull fracture. Lumbar puncture pressure was

10 Keegan J J and Bennett A E. Cerebral Aneurysm and Cortical Herniation. Arch. Neurol. & Psychiat. 26: 36 (July) 1931.

11 Gardner W J. The Tobey-Queckenstedt Test in the Localization of Tumors of the Cerebellopontile Angle. Arch. Neurol. & Psychiat. 20: 585 (Sept.) 1928. Lurje S L. The Queckenstedt Phenomenon in Tumors of the Posterior Cranial Fossa. Deutsche Zeitschr. f. Nervenh. 116: 170 1930.

12 Kindler W. The Recognition and Significance of Cisternal Block. Monatschr. f. Ohrenh. 63: 204 (Feb.) 1931.

subnormal and fluid was obtained only by aspiration. Cisternal puncture also showed a subnormal pressure, compression of either jugular vein caused a slight increase in pressure but bilateral jugular compression stopped the flow entirely. The tests suggested a cerebellar herniation. At necropsy a diffuse meningitis and definite coning of the cerebellum was found about the medulla but not sufficient to produce a complete wedging block of the foramen magnum.

CASE 2—*Type II pneumococcal meningitis from ethmoid sinusitis*. A young man, seen early in the infection was treated by continuous spinal drainage and forced hypotonic intravenous solutions and intracranial Felton's pneumococcus serum. In the terminal state poor spinal drainage was noted. At necropsy a diffuse meningitis secondary to suppurative ethmoiditis was found with a herniated cone of the cerebellum into the foramen magnum.

CASE 3—*Meningococcal meningitis*. A child aged 5 years was first treated on the fourth day of the infection. After seventy-two hours of alternate cisternal and lumbar serum injections the fluid was sterile and the infection appeared under control. Difficulty in removing enough cerebrospinal fluid to give serum was noted. The cisternal fluid at the first puncture was blood tinged. Increased head retraction, dysphagia, shallow rapid respirations and cyanosis were developing. Cerebellar herniation was suspected and hypertonic dextrose dehydration therapy was ordered. The intern's delay of several hours in carrying out orders found the patient already moribund and the child died during the dextrose administration. At necropsy the meningitis appeared entirely relieved but there was a marked pressure cone of the cerebellum into the foramen magnum with petechial hemorrhages of the pia mater about the rim of the herniated cone. Death was caused by a mechanical block of the foramen magnum with resultant medullary paralysis from cerebral edema. Earlier administration of dextrose would have prevented this death.

CASE 4—*Streptococcal otitic meningitis from suppurative petrositis*. Following a lumbar puncture the patient's pulse became slow, and increased pain developed in the neck with head retraction. The pulse became irregular, dysphagia was noted, and death followed within twenty-four hours. At necropsy a petrous apex abscess with invasion into the internal jugular vein produced diffuse meningitis and a marked pressure cone of the cerebellum into the foramen magnum.

CASE 5—*Streptococcal otitic meningitis from suppurative thrombophlebitis*. A boy, aged 6 years, died of meningitis following suppurative mastoiditis and lateral sinus thrombosis. Extensive intracranial treatment in the form of irrigation of iodine with hypotonic intravenous solutions to produce forced spinal drainage was used. This treatment increased the cisternal pressure from either lumbar or cisternal puncture. Cerebellar herniation was observed at necropsy. Attacks of slow respiration and cyanosis were noted. These critical signs were relieved by hypertonic intravenous dehydration. Death occurred from cerebral edema and herniation of the cerebellum into the foramen magnum. The lateral sinus thrombosis was not produced.

This case and case 2 were treated with the use of forced hypotonic solutions.

##### FATAL CASES

CASE 6—*Third ventricle tumor*. The onset of intracranial pressure was rapid. The neurologist observed a large arachnoidal hemorrhage with lateral displacement of the midline. Lumbar puncture revealed 12 mm of pressure. Compression gave a normal pressure. The left jugular vein gave no response. Pain in the head. The diagnosis was acute medullary paralysis. Encephalography was found with herniation into the foramen magnum.

continuous observation of the patient for at least the first twenty-four hours. During convulsions the inhalation of amyl nitrite may be prolonged to a minute or slightly longer. When respiration and heart rates show little or no abnormality, the administration of amyl nitrite should be reduced to once every several hours. To combat severe headaches that may occur an analgesic with no depressive action on respiration may be employed.

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7 Knox, Leila C. Sudden Death Associated with Brain Cysts. *J. A. M. A.* 95: 1813 (Dec. 13) 1930.

8 Reuben, M. S. and Chasnoff, Julius. Cisterna Magna Pressure Syndrome. *Arch. Pediat.* 47: 201 (April) 1930.

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All these reports indicate the frequency of this important complication of increased intracranial pressure.

The following are cases that have been observed in the past few years by Dr G. A. Young, myself and other members of the staff of the University of Nebraska College of Medicine. These cases have served to impress on us the necessity of constantly considering the possibility of this serious complication of foramen magnum block in either acute or chronic increased intracranial states.

#### CEREBROSPINAL FLUID PRESSURE IN OBSTRUCTION OF THE FORAMEN MAGNUM

##### FATAL CASES OF MENINGITIS

CASE 1—*Post traumatic meningitis*. A young man was observed in the terminal stage of a pneumococcal meningitis following a skull fracture. Lumbar puncture pressure was

subnormal and fluid was obtained only by aspiration. Cisternal puncture also showed a subnormal pressure, compression of either jugular vein caused a slight increase in pressure but bilateral jugular compression stopped the flow entirely. The tests suggested a cerebellar herniation. At necropsy a diffuse meningitis and definite coning of the cerebellum was found about the medulla but not sufficient to produce a complete wedging block of the foramen magnum.

CASE 2—*Type II pneumococcal meningitis from ethmoid sinusitis*. A young man seen early in the infection was treated by continuous spinal drainage and forced hypotonic intravenous solutions and intracarotid Felton's pneumococcus serum. In the terminal state, poor spinal drainage was noted. At necropsy a diffuse meningitis secondary to suppurative ethmoiditis was found with a herniated cone of the cerebellum into the foramen magnum.

CASE 3—*Meningococcal meningitis*. A child aged 5 years was first treated on the fourth day of the infection. After seventy-two hours of alternate cisternal and lumbar serum injections the fluid was sterile and the infection appeared under control. Difficulty in removing enough cerebrospinal fluid to give serum was noted. The cisternal fluid at the last puncture was blood tinged. Increased head retraction, dysphagia, shallow rapid respirations and cyanosis were developing. Cerebellar herniation was suspected and hypertonic dextrose dehydration therapy was ordered. The intern's delay of several hours in carrying out orders found the patient already moribund, and the child died during the dextrose administration. At necropsy the meningitis appeared entirely relieved, but there was a marked pressure cone of the cerebellum into the foramen magnum with petechial hemorrhages of the pial membrane about the rim of the herniated cone. Death was caused by a mechanical block of the foramen magnum with resultant medullary paralysis from cerebral edema. Earlier administration of dextrose would have prevented this death.

CASE 4—*Streptococcal otitic meningitis from suppurative petrositis*. Following a lumbar puncture the patient's pulse became slow and increased pain developed in the neck with head retraction. The pulse became irregular, dysphagia was noted and death followed within twenty-four hours. At necropsy a petrous apex abscess with invasion into the meninges produced diffuse meningitis and a marked pressure cone of the cerebellum into the foramen magnum.

CASE 5—*Streptococcal otitic meningitis from lateral sinus thrombophlebitis*. A boy, aged 6 years, developed meningitis following suppurative mastoiditis and lateral sinus thrombosis. Extensive intracarotid treatment in the form of Pregl's solution of iodine with hypotonic intravenous Ringer's and dextrose solutions to produce forced spinal drainage was carried out. This treatment increased the cerebral edema, and poor drainage from either lumbar or cisternal puncture was noted. Signs of cerebellar-magnum obstruction occurred in the form of cyanotic attacks, slow respirations, and syncope. On two occasions after these critical spells, the patient rallied remarkably following hypertonic intravenous dextrose injections. The patient finally died of spreading encephalitis and medullary failure. At necropsy, subdural abscess near the cranial vault, diffuse meningitis, lateral sinus thrombosis and a compression ring at the foramen magnum not producing a complete block were noted.

This case and case 2 illustrate the danger of increasing cerebral edema and medullary compression by the use of forced hypotonic solutions.

##### FATAL TUMOR CASES

CASE 6—*Third ventricle tumor*. The patient had a sudden onset of intracranial pressure symptoms following a head injury. The neurologic observations were suggestive of a subarachnoid hemorrhage with latent hematoma. Cisternal puncture revealed 12 mm of mercury pressure. The right jugular compression gave a normally active response, compression of the left jugular vein gave a delayed response with increased pain in the head. The fluid was yellow. The patient developed acute medullary paralysis with sudden death six hours after encephalography. At necropsy, third ventricle glioma was found with hemorrhage into the tumor and recent hemorrhage into the ventricles with cerebellar herniated cone.

<sup>10</sup> Keegan J. J. and Bennett A. E. Cerebral Aneurysm and Cortical Herniation. *Arch. Neurol. & Psychiat.* 26:36 (July) 1931.

<sup>11</sup> Gardiner W. J. The Tobey-Queckenstedt Test in the Localization of Tumors of the Cerebellopontile Angle. *Arch. Neurol. & Psychiat.* 20:585 (Sept.) 1928. Lurje S. L. The Queckenstedt Phenomenon in Tumors of the Posterior Cranial Fossa. *Deutsche Ztschr. f. Nervenh.* 115:170 1930.

<sup>12</sup> Kindler W. The Recognition and Significance of Cisternal Block. *Monatsschr. f. Ohrenh.* 65:204 (Feb.) 1931.

**CASE 7—Right subcortical tumor with right ptosis and left hemiparesis** This patient was observed first on account of sensory jacksonian convulsions and nine months later in a terminal coma. Pressure symptoms or localizing signs were absent until two weeks before death. Cisternal puncture revealed the initial pressure to be 12 mm of mercury. No response occurred on bilateral jugular compression, but as the jugular compression was released there was a prompt rise up to 20 mm of mercury. On a second bilateral jugular compression the pressure fell a few millimeters from 20 mm and on release of jugular compression the pressure rose promptly to 30 mm. After that the jugular compression failed to show these bizarre phenomena. After removal of a few cubic centimeters of fluid, the pressure dropped promptly to 10 mm of mercury.

These results indicated a partial intermittent block with a disturbance of the normal hydrodynamics, a bizarre Queckenstedt response of partial subarachnoid block and also a reversed Queckenstedt sign with a secondary rise indicative of ball valve or partial obstruction at the foramen magnum.

#### CASES OF RECOVERY

**CASE 8—Midbrain tumor not confirmed** A girl, aged 6 years, gradually developed a midline cerebellar syndrome of pressure type (choked disks lateral and vertical nystagmus, vomiting suboccipital pain and bilateral ataxic signs). A cerebellar decompression was performed by Dr J. J. Keegan. After tapping the ventricle, he found no tumor. The block undoubtedly was of the cerebral aqueduct. The cerebellum was herniated down to the second cervical vertebra. In this case there had been a slow development of cerebellar herniation producing only cerebellar symptoms without symptoms of acute medullary compression. This type of case undoubtedly would have a fatal ending from spinal puncture.

**CASE 9—Meningococcus meningitis** An adult patient was observed shortly after case 3. During the course of intracisternal and spinal serum therapy there occurred definitely increased rigidity of the neck with occipital pain. The pulse dropped to 50. The symptoms were made worse by attempted drainage. One hundred and fifty cubic centimeters of 50 per cent dextrose was given three times at eight-hour intervals. Clinical improvement was marked, leading to recovery. Apparently an early cerebellar-magnum block was relieved by hypertonic dextrose.

**CASE 10—Meningococcus meningitis** A girl, aged 5 years entered the hospital three days after the onset of the meningitis. After two spinal serum injections the child suddenly refused fluids, the pulse dropped to 62 and the temperature to 96 rectal. The child was more restless, crying out with pain, and the neck showed increased retraction. The pulse continued slow and irregular. A cisternal puncture showed a low pressure without a good response on bilateral compression of the jugular vein. Only 7.5 cc. of cerebrospinal fluid was obtained and about 5 cc. of serum was given. Respiratory irregularity and cardiac arrhythmia developed immediately following the puncture. The patient's condition was very poor. Attacks of cyanosis developed, the respirations were very slow and deep, and the patient became comatose. Fifty cubic centimeters of 50 per cent dextrose was given in the vein at once. At the end of the injection the child had a severe generalized convulsion and the respiration ceased. Hypodermic stimulation and artificial respiration with oxygen were given with the head lowered. Another 50 cc. of 50 per cent dextrose was given while the child looked as though she was dying. After some minutes the cardiac action improved and the respirations returned, at first irregularly and later normally. The lumbar administration of serum was begun twenty-four hours after this attack, and the patient made a normal recovery. This is another example of acute cerebral edema with mechanical block of the foramen magnum and medullary paralysis in which the hypertonic dextrose was undoubtedly life saving. Its use in meningitis has become almost routine.

**CASE 11—Cerebral aneurysm, meningeal apoplexy** A patient developed a typical spontaneous meningeal apoplexy. The first cisternal puncture revealed a uniformly bloody fluid under 14 mm. of mercury pressure. Jugular compression gave normal results and a usual drainage was done. Lumbar puncture,

twenty-four hours later, revealed 30 mm of mercury pressure on compression of either jugular vein. A prompt drop in pressure to 20 mm occurred, but with bilateral compression of the jugular vein the pressure rose slowly to 40 mm. After removal of 5 cc. the pressure dropped to 10 mm of mercury, nystagmus and increased rigidity of the neck were noted. Further drainage was discontinued and hypertonic intravenous dextrose with magnesium sulphate was given by rectum with complete relief of symptoms.

This case in which there was undoubtedly an early potential ball valve block, demonstrates, along with case 7, an apparently new sign, namely, a reversed Queckenstedt phenomenon, which seems to be diagnostic of partial cerebellar herniation into the foramen magnum. Its presence always contraindicates further spinal or cisternal punctures and indicates active dehydration therapy to prevent serious medullary paralysis.

**CASE 12—Brain swelling, etiology undetermined, cerebellar herniation, relieved by ventricular puncture** A woman, aged 28, entered the Douglas County Hospital with a vague history of chronic headache, lethargy and vomiting. At first the patient was treated as showing a catatonic psychotic reaction. A variable pulse rate developed, at times 48 and 60, at other times 160. Dysphagia and nystagmus were noted. A spinal puncture showed a pressure of 28 mm of mercury (jugular phenomena were not observed). Medullary symptoms became more pronounced and the neurologic examinations showed normal optic disks, nystagmus, neck rigidity, bilateral hypotonia and ataxia. Severe suboccipital pain was present. A cisternal puncture showed a low pressure, from 8 to 10 mm of mercury with no response on jugular vein compression. Three injections of 150 cc. of 50 per cent dextrose did not improve the patient. She appeared critically ill, was more lethargic and vomited. The pulse was weak and rapid and the neck retraction extreme. Ventricular puncture was performed by Dr J. J. Keegan. The ventricles were apparently not dilated. The needle was left in place three days for drainage. Almost immediately the patient's condition improved, the pulse regained normal rate and volume, the headache disappeared and the patient has gradually become mentally alert. The etiology is still undetermined. The blood Wassermann reaction was 4 plus the spinal reaction normal. The patient's general condition improved on treatment for syphilis.

#### COMMENT ON CASES

The frequency of pressure herniation with partial obstruction of the foramen magnum as a complication of meningitis cannot be too strongly emphasized. Spinal block is spoken of frequently in articles on meningitis. In my experience, adhesive or fibrinous exudative blocks are rare and in acute stages never found. The obstruction is undoubtedly due to an acute cerebral edema producing medullary compression at the foramen magnum, obstructing the subarachnoid flow into the spinal canal. Early deaths in meningitis are frequently caused by this obstruction producing medullary failure.

Increasing occipital pain, not relieved by drainage, or increased neck pain with head retraction, and any medullary symptoms such as disturbance of the pulse, respiratory ratio, dysphagia or vomiting justify a diagnosis of cerebrospinal fluid block at the foramen magnum. Any abnormal pressure phenomenon, an absence of response on jugular compression, a sudden drop in the pressure reading, a reversed or bizarre Queckenstedt sign, clinches the diagnosis and calls for immediate dehydration therapy and at times ventricular drainage to save life.

A large number of these cases were seen before we had noted the bizarre or reversed Queckenstedt sign, so we cannot state whether it was present in these cases. Frequently, jugular compression studies were not carried out. This fact illustrates the need for a routine type

of pressure study to be carried out in all spinal or cisternal punctures

In two instances (cases 2 and 5) it was observed that use of hypotonic solutions for the purpose of forcing spinal drainage must be watched carefully because of the danger of cerebral edema, leading to medullary compression. One must be ready in the face of symptoms of herniation to reverse the process and give hypertonic dehydrating therapy.

In chronic, slowly developing intracranial pressure states, marked cerebellar herniation may gradually occur without producing acute medullary compression symptoms but will show itself clinically as a midline cerebellar syndrome. This syndrome is demonstrated in case 8.

All spinal cisternal punctures or drainages are contraindicated in the face of cerebellar herniation and frequently lead to early, fatal medullary paralysis.

#### OUTLINE OF SYMPTOMS AND SIGNS OF CEREBELLAR HERNIATION

- 1 Severe suboccipital pain, radiating up to the ears, increased by head movement
- 2 Increasing head retraction or opisthotonos occurring in children, a fairly complete block
- 3 Slow pulse, cardiac arrhythmia, attacks of cyanosis, mottled skin
- 4 Respiratory arrhythmias, from slow deep respirations to Cheyne-Stokes type
- 5 Dysphagia, refusal of fluids
- 6 Forceful vomiting
- 7 Bruit heard over the occipital region, where there is compression of the vertebral arteries
- 8 Blood tinged cisternal fluid

#### PRESSURE SIGNS ON SPINAL OR CISTERNAL PUNCTURE

##### A Complete block

1 Positive Queckenstedt sign. No response or increased manometric pressure on bilateral jugular vein compression, indicative of subarachnoidal block anywhere, in the absence of evidence, for spinal block usually means block of the foramen magnum.

2 Increased spinal manometric pressure at the outset of puncture with a sudden drop to normal or subnormal after removal of a few cubic centimeters of cerebrospinal fluid. This finding shows that a block has been produced by the puncture.

3 After the block has been established, a low pressure, and a cerebrospinal fluid obtained with difficulty or only with aspiration. Such a condition is often thought to be "dry tap."

##### B Partial or ball valve type of block

1 Slow or delayed response on jugular compression with increase in patient's occipital or head pain.

2 Reverse of Queckenstedt's sign. On compression of either jugular vein a drop in pressure reading instead of a normal rise, with a slow return to the initial reading.

3 Slight fall from the initial pressure on combined bilateral pressure, with a delayed rise after release of the jugular compression to a higher reading than the initial reading.

#### SUMMARY

The clinical importance of cerebellar herniation into the foramen magnum as a complication and immediate cause of death in acute and chronic intracranial pressure states has been stressed.

A review of the available anatomic, pathologic and clinical observations of this important syndrome in the medical literature has been made.

Clinical, necropsy or cerebrospinal fluid pressure studies were made in twelve cases of acute and chronic compression syndromes. The symptoms and signs of cerebellar herniation with special reference to spinal fluid studies indicating partial and complete subarachnoidal block from cerebellar coning or wedging into the foramen have been outlined.

#### CONCLUSION

Cisternal or spinal punctures are a frequent cause of death and are contraindicated when evidence of this block is found. Immediate dehydration therapy and at times ventricular drainage are indicated in order to prevent fatal medullary paralysis.

The extreme importance of this block as an early cause of death in meningitis has been practically overlooked in the literature. In my experience, the foramen magnum has been the most frequent site of block. I am constantly on the alert to detect its presence and consider intravenous hypertonic dextrose life saving in this condition.

A new manometric pressure sign, namely, a bizarre or reversed Queckenstedt phenomenon, has been observed, which apparently indicates an early partial or intermittent ball valve type of obstruction of the cerebellum herniated into the foramen magnum. It is believed that further observation and use of this sign will enable one to make a diagnosis of impending block and thus to institute proper preventive therapy against fatal medullary compression.

1436 Medical Arts Building

#### ANTEROLATERAL CHORDOTOMY FOR INTRACTABLE PAIN

EDGAR A. KAHN, MD

ANN ARBOR, MICH

Although Spiller's operation of anterolateral chordotomy has been often performed since 1911 for the control of intractable pain, it may still be said to be a much neglected procedure, the great scope of which has not been recognized by the medical profession.

Historically, Van Gehuchten in 1893 first expressed the definite opinion that fibers conveying pain and temperature sensation passed up the cord in Gowers' tract, although Gowers himself had suggested this in 1879.

No actual proof was afforded until Spiller's<sup>1</sup> fortunate observation of a patient at the Philadelphia General Hospital in August, 1904. This patient showed an almost complete loss of the sense of pain and temperature in the legs, with preservation of tactile sensibility. He was under observation for some months and died in January, 1905. The necropsy revealed a solitary tubercle involving the right tract of Gowers at the extreme lower end of the thoracic cord and slightly above this a second solitary tubercle implicating the left tract of Gowers.

This absolute localization of the pain tracts and the evidence that no important motor or tactile fibers passed

From the Department of Surgery, University Hospital.  
1 Spiller, W. G. The Occasional Clinical Resemblance Between Cases of the Vertebrae and Lumbosacral Syringomyelia and the Location Within the Spinal Cord of the Fibers for the Sensations of Pain and Temperature. Univ. Pennsylvania M. Bull. 18:147 (July-Aug) 1905.



done, resulted in a complaint of numbness of the legs. This seems rather good evidence that many of the fibers carrying tactile sensation lie in the most anterior part of the spinothalamic tract.

Starting the incision back of the dentate would, of course, give permanent pyramidal tract damage. This has not occurred in our series though atrophy of the deltoid resulted in one high cervical cord incision, probably from damage to anterior horn cells from too deep an incision.

#### CAUSES OF FAILURE

Though our results have on the whole been gratifying, not more than three fourths of them have been really satisfactory. There are a number of contributing factors here.

In the first place, pain is purely subjective. One of the most difficult questions we are all called on to answer is whether or not a patient's pain is of psychogenic origin. In two cases of pain of unknown etiology, one was still unrelieved after three successive chordotomies, a higher level being obtained each time. Even in the presence of organic pathologic changes we cannot be certain that the pain is not imagined or simulated by the patient, perhaps to obtain morphine.

True morphine addiction is conducive to poor results. There have been two and possibly four failures from this source. We have, however, frequently operated on patients taking large doses of morphine who gladly gave up the narcotic as soon as the pain of the laminectomy incision had subsided. There must be a predisposition to drug addiction, mental, physical or both, since some people taking large doses immediately give up morphine when their organic pain is relieved.

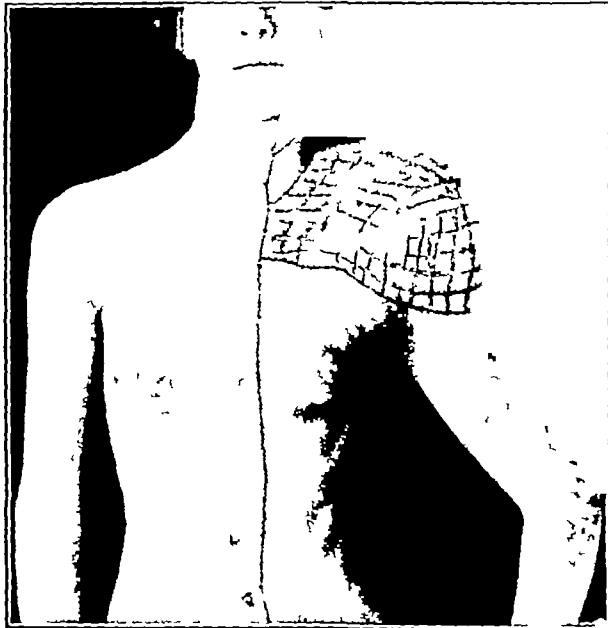


Fig 2—High level of analgesia obtained from section of spinothalamic tract just above the third cervical segment. The cross hatched area represents the total anesthesia obtained from cutting the third fourth and fifth posterior nerve roots on the left.

The most definite cause of the failure of chordotomy is a level of analgesia below the pain zone. A case of carcinoma of the pericardium and one of gastric crises were not relieved for this reason. At that time, we were unfamiliar with Foerster's work and did not feel safe in making an incision into the spinothalamic tract

deeper than 3.5 mm. We have frequently since made incisions 4.5 and 5 mm in depth.

#### COMPLICATIONS

Since the incision is ordinarily made in the upper thoracic region, severe pain is usually complained of for a few days postoperatively. This results chiefly from the pull of the shoulders on the incision. The

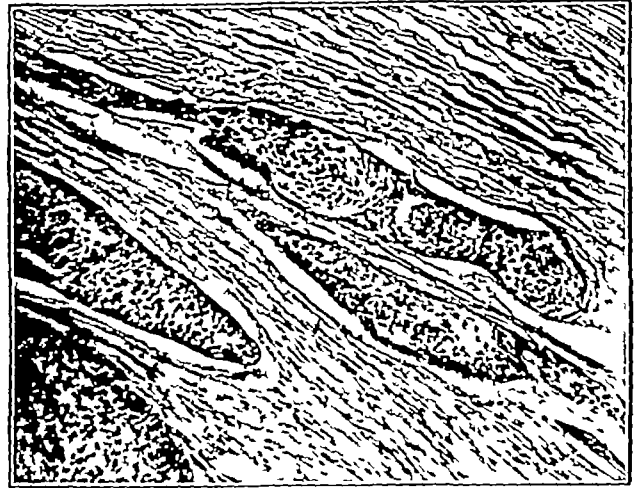


Fig 3—Section of carcinomatous infiltration into sciatic nerve. Complete relief of pain from unilateral chordotomy up to the time of death three weeks later.

pull of the shoulders may also tend to reopen the incision in cachectic individuals. This has happened twice in this series. The smaller incision now being made should decrease this possibility.

Recently we have been making the incision higher in all cases, removing the laminae of the seventh cervical and first dorsal vertebrae for low chordotomy. This has decreased the immediate postoperative pain, by removing the pull of the shoulders.

The pain in the laminectomy incision may make determination of the sensory level impossible for a while after the patient has reacted from the anesthetic. The following case is instructive.

A woman, aged 28, highly intelligent had been operated on elsewhere for what proved to be a cylindroma of the pelvis. X-ray and radium therapy had been used extensively and the pain had become excruciating. She was in a highly nervous state and had slept little for some weeks. Chordotomy was performed, but on reacting from the anesthetic the patient still complained of her old pain. No sensory level could be determined because of lack of cooperation. The following day the wound was reopened and deeper incisions were made. Again on reacting no sensory level could be determined and the pain continued. A few days later a high sensory level was demonstrated. The pain persisted a few more days and then disappeared.

There is little doubt that the first chordotomy was satisfactory.

Because of the analgesia produced and the ordinarily poor state of nutrition of these patients, pressure sores are prone to develop. I feel certain that trophic influences do not enter here. These decubital areas are, however, never painful following bilateral chordotomy, since the analgesia produced extends into the subcutaneous tissues, muscle fascia and periosteum.

In more than half of our cases of bilateral chordotomy, bladder disturbance in the form of retention has been present. This is especially true when a path-

ologic condition of the pelvis is present. The bilateral cord incision eliminates the sensation of pain and undoubtedly diminishes the remaining bladder sensation. It is even possible that motor tracts to the bladder whose location in the cord is unknown may be damaged. When the added factor of the pelvic disorder, especially infiltration of the posterior bladder wall so common in carcinoma of the uterus, enters, the bladder disturbance is permanent, and constant drainage by an inlying catheter is necessary. We now place an inlying catheter postoperatively as a routine. This avoids the danger of pyelitis, since considerable contractile force is still present in the bladder. The normal bladder function reestablishes itself in the absence of pelvic disturbance in from a few days to a few weeks.

The pain sense in the area originally analgesic may return in from a few weeks to a few years. Temperature sense always returns more quickly than pain sense.

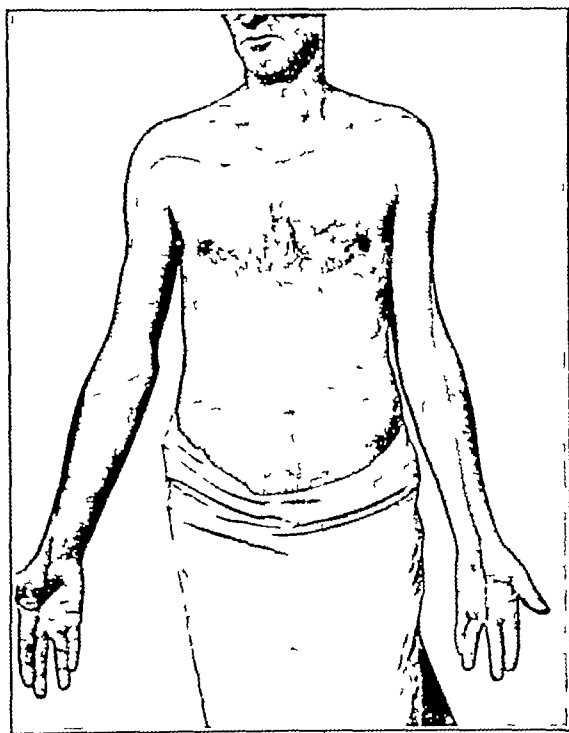


Fig. 4—Area of loss of pain and temperature sense from bilateral chordotomy for gastric crises of tabes. Complete relief of symptoms one year after operation.

We have had four patients with pelvic disorders who had a gradual return of pain, three after two months, the fourth after a year. Since part of the spinothalamic tract extends anterior to the anterior nerve roots, some of the pain sense may be taken over by them. The remainder may come through the posterior column or sympathetics.

When a unilateral chordotomy is done, the pain sense is apt to return quickly. Moreover, when unilateral chordotomy is performed, Foerster has demonstrated a slight but very definite diminution of pain spots on the homolateral side. This is proof that some of the pain fibers ascend in the hemolateral spinothalamic tract. This is especially true of temperature sensation. In unilateral chordotomy, there may be no demonstrable change in temperature sense on the contralateral side. There must be a great deal of individual variation in the arrangement of the spinothalamic tracts.

## THE PITUITARY HORMONE INTERMEDIN

AS THE ACTIVE ANTIDIURETIC IN THE TREATMENT OF DIABETES INSIPIDUS. PRELIMINARY REPORT

MARION B. SULZBERGER, MD

NEW YORK

In three recent publications, Zondek and his collaborators<sup>1</sup> report that they have demonstrated the presence of a new pituitary hormone—Intermedin. According to them, this hormone is secreted by the pars intermedia of the pituitary gland. They further state that it differs in its reactions to chemical and physical agents and, above all, in its biologic effects from the prolans of the anterior pituitary lobe and the oxytocic and the pressor principle of the posterior lobe. In warm-blooded animals, Zondek and his collaborators demonstrated Intermedin to be present in the entire pituitary gland, in the infundibular stalk and in the walls of the third ventricle. They were unable to demonstrate its presence in any other part of the brain, or in any other tissues or fluids of the body.

Zondek and collaborators state that no specific biologic effects of this hormone have been observed in warm-blooded animals. It is without any of the effects of the other pituitary hormones in human beings.

This is demonstrated by the fact that the Intermedin preparation, which Zondek and Krohn<sup>2</sup> were able to produce in almost pure aqueous solution (through various chemical and physical procedures that destroyed or eliminated, to a great degree, all the other pituitary hormones and all proteins and impurities), has, until now, been without known specific effect in man or in other mammals.

Prior to the experiments I am about to report, the only demonstration that one was dealing with a specific hormone in Intermedin was through its proved specific action on the pigment-forming cells of certain cold-blooded animals. Zondek and his collaborators have shown that it is a specific pigment hormone and changes the pigmentation of *Phoxinus laevis*, a type of minnow, causing red to appear on the belly, anterior thorax and perioral areas of this fish. (Ordinarily this red coloration is present only during the spawning season.) According to Zondek and his collaborators, this specific Intermedin action cannot be produced by any other hormone. For this reason, they have used this pigment reaction in the fish to standardize their Intermedin preparations, and the quantities of hormone in solution are expressed in phoxinus units. As stated, Zondek and his co-workers found no action of this hormone in normal or diseased persons. They had not used it in diabetes insipidus.

My attention was drawn to the study of the possible effects of Intermedin in mammals and particularly in human beings through the following considerations:

In view of Zondek's work showing that a specific hormone, of as yet undiscovered purpose or function, was to be found in the pituitary gland, in the infundibular stalk and in the walls of the third ventricle, and in these alone, it seemed logical that the action, if any, must take place in these areas. As is well

From the Dermatological Service, Montefiore Hospital for Chronic Diseases.

This investigation precedes certain experiments as to the effects of Intermedin in dermatologic conditions.

<sup>1</sup> Zondek, Bernhard and Krohn, Hans. Hormon des Zwischenlappens der Hypophyse (Intermedin), *Klin. Wchnschr.* 31: 1293 (July 30) 1932.

known, these parts of the brain include those in which the lesions in diabetes insipidus are considered to be localized.<sup>2</sup>

Extract of pituitary, prepared from the posterior lobe, is of beneficial action in controlling thirst and urination in diabetes insipidus. As Zondek and his collaborators were able to show, the posterior lobe contains large quantities of Intermedin, and extracts, prepared from posterior lobe substance and not subjected to specific processes for removing Intermedin, must contain, in addition to the posterior lobe hormones, varying quantities of Intermedin.<sup>3</sup>

These facts and considerations made it seem possible that Intermedin might be the active principle in the treatment of diabetes insipidus and that the posterior pituitary solutions now in use were, perhaps, efficacious to some extent because of their Intermedin content. Should this hypothesis prove true, certain obvious advantages would be gained by treating diabetes insipidus with Intermedin alone. For one could increase the dosage of Intermedin almost as desired, there being no known unpleasant effects such as are produced by the hormones of the posterior lobe, i. e., no contraction of the blood vessels, no spasms of the uterus and intestine, and no increase of blood pressure and of blood sugar.

I employed a pure aqueous solution of Intermedin prepared in the Berlin laboratories of Professor Zondek and there found to be without oxytocic principle, pressor principle or prolactin effects. The preparation was standardized in Berlin and each 1 cc ampule contained 500 phoxinus units of the hormone.<sup>4</sup>

I am indebted to Dr. Sidney P. Schwartz of Montefiore Hospital, who tested the Intermedin preparation for possible harmful effects by injecting 1 cc intravenously in himself. There were no ill effects or effects due to the administration of solution of posterior pituitary.

This result coincided with Zondek's previous observations and I therefore did not hesitate to employ the Intermedin in my two cases of diabetes insipidus.

**CASE 1**—R. S., a man, aged 41, had been suffering for two and a half years from typical diabetes insipidus. In March, 1932, he underwent an operation for mastoid disease, in which a peculiar fatty tissue was removed from the mastoid cells. The remainder of the personal and family history is not pertinent. There were no roentgenologic changes in the sella turcica and no other signs of disturbed pituitary function. When left without treatment, he was obliged to drink abnormally large quantities of liquid and to urinate approximately every forty-five minutes, day and night.

By means of injections of solution of posterior pituitary, or by intranasal aspiration of posterior pituitary every three to four hours, the tormenting thirst was caused to subside, and the patient urinated at intervals of approximately four hours.

Jan 15, 1933, the patient sprayed the contents of one-fourth ampule of Intermedin intranasally. This treatment had apparently no effect. The patient's thirst and frequent urination persisted. By taking about 0.25 cc of posterior pituitary extract Obstetrical Parke-Davis through the nasal mucosa, the patient urinated at intervals of from three to four hours, as compared to forty five minutes.

2 (a) Cushing, Harvey, Pituitary Body, Hypothalamus and Parasympathetic Nervous System, Baltimore, Charles C. Thomas, 1932, pp. 19, 20. (b) In connection with the question of the region probably involved in diabetes insipidus and in consideration of the reports by Zondek concerning the areas in which he found Intermedin, it is of interest to note the observations at autopsy in my case 2 in which the patient died about two months after my experiments. A cavernous hemangioma was present in the hypothalamus. This tumor had destroyed the region of the third ventricle and had compressed the infundibular stalk. The pituitary gland itself was apparently unaffected. (This case is to be reported in detail by Drs. Davison and Selby of the Neurological Division of the Montefiore Hospital.)

3 Zondek and Krolin<sup>1</sup> also found Intermedin in the anterior lobe substance.

4 I am indebted to Prof. Zondek for his cooperation without which this work would not have been possible.

January 19, the patient, who had gone without treatment for some time and was urinating at approximately forty-five minute intervals, received a deep subcutaneous injection of 1 cc. of Intermedin. The patient did not urinate until two and a half hours after this injection, then after one hour, and again after one hour.

At 4 p. m., January 28, the patient took a last dose of solution of posterior pituitary intranasally. He began to get very thirsty and to drink copiously at about 7 o'clock. He urinated at 7:45, 8:50, 9:55 and 10:23. At 10:20, he received a deep subcutaneous injection of 2 cc. of Intermedin. The next urination was at 3:20 a. m., an interval of five hours. The following urination was at 6:20. There were no disagreeable or other effects. It must be noted that there were no pituitary effects as previously suffered by the patient after having taken large doses of solution of posterior pituitary. A quantity of solution of posterior pituitary sufficient to prevent urination for five hours caused the patient to exhibit pallor and to have profuse perspiration, palpitations and intestinal cramps.

**CASE 2**—M. R., a man, aged 31, suffered from typical diabetes insipidus and polyglandular syndrome. The patient was obese and had a feminine type of hair distribution, a basal metabolic rate of minus 41, and a blood pressure of 92 systolic and 56 diastolic. There was no roentgenologic evidence of changes in the sella turcica. According to Dr. Israel Wechsler, to whom I am indebted for placing this case at my disposal, there was neurologic evidence of pathologic processes in the

#### Observations in Case 2

	Weight		Fluid Intake and Excretion from 9 A. M. to 9 P. M.
	Pounds	Kilograms	
February 9 (without treatment)	212½	96	Intake 5,550 cc Excretion 6,960 cc
February 10 (without treatment)	210	95	Intake 4,800 cc Excretion 6,000 cc
February 11 (Intermedin injections)	207	94	Intake 2,440 cc Excretion *2,200 cc

\* Excretion was reduced to an even greater degree than is shown by these figures for more than 9.0 cc of urine had been voided in the four hours before the Intermedin was injected. The same holds true of the fluid intake.

region of the third ventricle.<sup>2b</sup> Solution of posterior pituitary and thyroid extract were of uncertain action and without definite beneficial effects.

A record of the observations in an experiment carried out for me on the patient by Dr. Sidney P. Schwartz is given in the accompanying table.

February 11, at 1 p. m., the patient received 2 cc of Intermedin injected deep subcutaneously, the same amount was given at 2:10. Before treatment, the patient had been obliged to take incredibly large quantities of fluid (he was observed to drink 1,600 cc. at one time) and had to urinate with corresponding frequency. After the Intermedin injections, there was an interval of fourteen hours, during which he had no desire to drink or to urinate (from 6 p. m., February 11, to 8 a. m., February 12). The Intermedin injections caused no unpleasant by-effects and had no pituitary-like action.

In this case the Intermedin effect was incomparably better than that which had been achieved by any other therapy, including solution of posterior pituitary.

It seems permissible to conclude from these results that, in the two cases investigated, Intermedin had a marked effect in reducing both intake and output of fluid and thus alleviated the symptoms. Furthermore, although the observations have been restricted thus far to only two cases, it seems significant not only that the effects achieved were striking but that they were proportional to the quantity of Intermedin administered (case 1, 1 cc, two and a half hours without urinating, 2 cc, five hours without urinating, case 2, 4 cc fourteen hours without urinating).

This preliminary report is being submitted in the full realization that the observations will have to be substantiated by observations in further cases and perhaps by animal experiments. For this reason, I do not care to discuss the many obvious practical and theoretical considerations at present. I shall conclude by calling attention to only a few of the more important questions evoked.

Is Intermedin a specific hormone regulating water metabolism? Will it be possible, through increasing the concentration and dosage of Intermedin, to render diabetes insipidus patients comfortable for long periods of time and, perhaps, even achieve some curative effect by aiding certain tissues to recuperate? Is the beneficial effect of solution of posterior pituitary in diabetes insipidus due to its Intermedin content? Should this be the case, it is conceivable that other conditions which are today to some degree benefited by solution of posterior pituitary might be even more favorably influenced by the increased dosage made possible by the administration of pure Intermedin.

200 West Fifty Ninth Street.

## PRIMARY CARCINOMA OF APPENDIX WITH GELATINOUS SPREAD

REPORT OF A CASE

MARCUS H. HOBART, M.D.

AND

J. PEERMAN NESSELROD, M.D.

EVANSTON, ILL.

This case of mucous cancer of the appendix, with gelatinous spreading peritonitis, is of primary interest, since a search of the literature revealed very few cases with similar pathologic changes.

Schena<sup>1</sup> reported the case of a man, aged 52, operated on in December, 1928, because of symptoms and signs pointing to involvement of the appendix. Operation revealed a mucous carcinoma of the appendix with gelatinous peritonitis. Appendectomy was performed. Two and a half years later the patient was again operated on for ulcerative carcinoma of the rectum. At this time only slight evidence of the former lesion remained in the pelvis.

Primary carcinoma of the appendix is by no means rare, the average occurrence being 0.39 per cent of all appendices removed.<sup>2</sup> Up to 1906, only 42 cases had been reported, while by 1929 the number had been raised to 334.<sup>3</sup>

In spite of this number, "at no time was carcinoma of the appendix diagnosed or suspected." On the other hand, a case was reported as diagnosed rectal cancer with symptoms of rectal and vesical pain, obstinate constipation, loss of weight and strength, and a constricting mass felt in the rectum which showed normal mucosa at biopsy.

5 This remark may also apply to the use of pure Intermedin in treatment of some conditions in which anterior lobe extracts have been used (alopecia etc.). Extracts of the anterior lobe probably also contain appreciable quantities of Intermedin.

From the Department of Surgery of Northwestern University Medical School.

1 Schena, A. T. Mucous Cancer of the Appendix. Gelatinous Peritonitis. Bol. y trab. de la Soc. de cir. de Buenos Aires 16: 320 (June 1) 1932.

2 Selinger, Jerome. Primary Carcinoma of the Vermiform Appendix, Ann. Surg. 89: 276 (Feb.) 1929.

3 Reid, Hugh and Smith, Hugh. Primary Carcinoma of the Appendix. Brit. M. J. 1: 492-493 (March 15) 1930.

At operation, a chronic fibroplastic appendicitis was revealed.<sup>4</sup>

Apparently there are two types of appendical carcinoma, depending partly on its location.

1 At the tip, where it occurs most often, in 90 per cent, the lesion is usually benign, as evidenced by its lack of metastases and by its failure to recur after removal. It was thought that in many cases the origin had been demonstrated to be not from epithelium at all, but from blood vessels. This would constitute actually a benign endothelioma.<sup>5</sup> Microscopically they show polygonal or spheroidal cells. However, Masson<sup>6</sup> now gives a modern view of their origin. "Carcinoids" result from the proliferation of the intravenous argentaffin cells of the neurocarcinoid type. They pile up in the nerve fibers, finally rupture their sheaths and infiltrate the tissue of the mucosa and then that of the submucosa. These cases are therefore not cancer at all and are well described as "carcinoids." This type



Fig. 1—Outer aspect of cecum and ileum showing site of removed appendicular tumor and gelatinous metastasis.

of case gives the symptoms of appendicitis and is usually so diagnosed.

2 At the proximal end of the appendix, in 10 per cent, a true malignant tumor occurs. This is not strictly a carcinoma of the appendix but finds its origin in the cecum or ileocecal valve. These tumors metastasize, or simply spread as in the case here reported, and demonstrate all the characteristics of other intestinal malignant growths. Microscopically, they show columnar cells or gelatinous adenocarcinoma. The symptoms here are more likely to simulate those of intestinal obstruction as well as of appendicitis, and because of early symptoms, diagnosis and operation are made earlier.

### REPORT OF CASE

A man, aged 65, Jewish, a life insurance agent, came to us complaining of "arthritis" and of a "bloated" stomach after meals both of which had been present for three months. He had had bloody stools at intervals during the past eight months. He had recently gone through a complete physical

4 Dzialaszynski, A. Rectal Carcinoma Simulated by Chronic Fibroplastic Appendicitis. Zentralbl. f. Chir. 55: 2566 (Oct. 13) 1928.

5 Moolton, R. R. Carcinoma of the Appendix, Ann. Surg. 90: 1110-1113 (Dec.) 1929.

6 Masson, P. Significance of Muscular Stroma of Argentaffin Tumors (Carcinoids), Am. J. Path. 6: 499-514 (Sept.) 1930.

and laboratory examination in Chicago, where he had been told that he had arthritis and that his bloody stools were due to hemorrhoids

The patient was very slight and emaciated. There was marked pallor of the mucous membranes and skin, the latter showed a distinct pale lemon tint. The heart was normal in size and shape, but auscultation revealed a soft systolic blow at the apex, not transmitted. The right half of the abdominal wall was definitely rigid. In the right upper quadrant were felt several irregularly shaped firm masses. A rectal examination revealed a firm tumor mass apparently in the anterior wall of the rectum. The examining finger was covered with dark red blood. The reflexes at this time were normal in response.

These observations seemed to warrant a diagnosis of carcinoma of the rectum with metastases to the upper part of the abdomen, which gave a poor prognosis.

Although the case was considered inoperable, hospitalization was advised in the hope that a biopsy of the "rectal" tumor might give further information. On rectosigmoidoscopic examination no tumor could be seen, yet on rectal digital palpation the tumor could be felt easily. The patient was given morphine for the examination and, because of the resulting relaxation of the abdominal wall, several firm irregularly shaped masses could be palpated in all quadrants of the abdomen. Roentgen study of the gastro-intestinal tract was attempted but was unsatisfactory because of the patient's weakness and inability to cooperate. Further examination was deemed inadvisable, as the patient was failing rapidly.

Seven days after leaving the hospital the patient became comatose. A right hemiplegia developed with typical neurologic manifestations. A week later the patient died.

Autopsy presented these essential conditions:

- 1 Primary mucoid carcinoma of the appendix.
- 2 Extensive spreading gelatinous carcinomatosis of the omentum and spleen.
- 3 Subacute thrombotic endocarditis.
- 4 Recent multiple infarcts of the spleen, kidneys and brain.

The subacute thrombotic endocarditis with resulting infarcts was considered the immediate cause of death with the car-

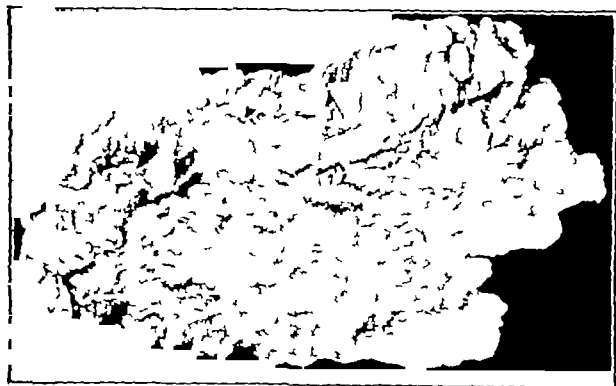


Fig 2.—Colon and greater omentum laden with gelatinous carcinoma.

cina as an accompanying pathologic condition. Thus are presented in one case two distinct clinical and pathologic entities.

Figure 1 represents the outer aspect of the cecum and terminal ileum with glistening gelatinous carcinoma, spreading over nearly the entire specimen. The darkened area near the tip of the cecum is the site of the appendiceal tumor.

In figure 2 is seen the upper half of the ascending colon and all the transverse colon, to which is attached the greater omentum laden with gelatinous carcinoma. The colon can be identified by one of its longitudinal bands and by its appendices epiploicae. In the lower

right-hand corner is seen that portion of the carcinoma laden omentum which happened to lie in the pelvis at the time of the first rectal examination and which led to the first diagnosis of cancer of the rectum. It is easy to understand that this elusive rectal tumor was the mobile omental mass.

Figure 3 illustrates the "lava-like flow" of gelatinous carcinoma over the diaphragmatic surface of the spleen, together with an infarcted area.



Fig 3.—Spleen partly covered with lava like flow of carcinoma. An infarct is also seen.

#### SUMMARY AND CONCLUSIONS

A rare case of gelatinous carcinoma of the appendix was observed associated with subacute thrombotic endocarditis with multiple infarcts of the spleen, kidneys and brain.

There are two types of carcinoma of the appendix, one, the common (90 per cent) tip carcinoids, practically always benign, the other, the rarer (10 per cent) true or malignant carcinoma of the base, usually arising from the cecum or ileocecal area.

Cancer of the appendix is practically never diagnosed as such before operation.

The fallacy of always trying to cover all the symptoms in a given case by one diagnosis is illustrated by this case with its two distinct clinical and pathologic entities of (1) cancer of the appendix and (2) subacute thrombotic endocarditis with multiple infarcts.

636 Church Street

**To See Where We Are**—I sometimes wonder if it would help us to close down the laboratories for a while, to hand over the wards to our juniors, and to get together and to try to see where we are. Perhaps we could then marshal our facts—clinical, immunological, and morbid anatomical—see where the gaps are, and begin to make more concerted efforts to fill them. Having done this we might try to dissociate and combine them by deliberation and some constructive thought. The truth is, although science never offered us so many new facts before or so many new instruments for possible exploitation in therapeutics, we seem for the time being less capable than we were of making use of them, except, as I have said, by way of direct action. But the proper adaptation of scientific discovery to therapeutics requires the careful application of physiological principles and a knowledge of the deviations from the physiological that constitute disease. This involves indirect action, which does not fit with the spirit of the times—Horder, Lord Annual Oration on New Treatments for Old, *Brit Med J* 1 859 (May 20) 1933.

## Clinical Notes, Suggestions and New Instruments

### TONIC LEUKOPENIA WITH RECOVERY FOLLOWING INJECTION OF PENTNUCLEOTIDE

EGBERT L. BURHYTE, M.D., AND EDWIN W. GATES, M.D.  
NIAGARA FALLS, N. Y.

A white boy, aged 11 months, seen by one of us, Feb 9, 1933, was said by the mother to have had a cold for two days. The past and family histories were essentially negative. Examination showed scattered pneumonic patches throughout the right lung. The temperature was 104.8 F by rectum. A diagnosis of bronchopneumonia was made and the child was immediately sent to the hospital.

For the first nine days the course of the disease was rather typical and not worthy of comment. Roentgen examination of the chest confirmed the diagnosis of pneumonia. Examinations of the urine had given essentially negative results. On the second day the blood count showed 80 per cent hemoglobin, 4,500,000 red blood cells and 13,700 white blood cells.<sup>1</sup> Five days after admission the count was as follows: hemoglobin, 82 per cent, red blood cells, 4,600,000, white blood cells, 8,300, polymorphonuclears, 48 per cent, small lymphocytes, 32 per cent, large lymphocytes, 14 per cent, large mononuclears, 0, moderate achromia, normoblasts, 0, megaloblasts, 0, eosinophils, 3 per cent, basophils, 0, transitionals, 3 per cent, neutrophil myelocytes, 0, eosinophil myelocytes, 0. On the tenth day the temperature dropped to normal and remained normal for three days.

On the fourteenth day the temperature suddenly rose to 106.2 F. Physical examination showed a large red swollen papule on the right posterior part of the chest with several small ones on the back and anterior part of the neck. The mouth showed no lesions. The urine was normal and the blood count at 4 p. m. showed white blood cells, 4,200 polymorphonuclears, 4 per cent, small lymphocytes, 63 per cent,

given intramuscularly. The accompanying graph and table show the changing blood picture and the following shows the dosage of pentnucleotide:

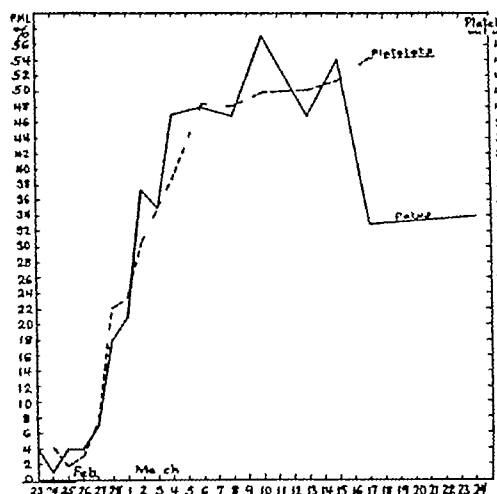
February 24 a. m., 3 cc., p. m., 4 cc.  
February 25 a. m., 4.5 cc., p. m., 6 cc.  
February 26 a. m., 6 cc., p. m., 4 cc.  
February 27 a. m., 4 cc., p. m., 4 cc.  
February 28 a. m., 4 cc., p. m., 2.5 cc.  
March 1, 2 cc.  
March 2, 2 cc.

The blood culture was negative. The temperature was practically normal from one day following that on which it went to 106.2. Progress from then was as follows:

February 23, another large inflamed area was found over the right anterior part of the chest. The right posterior part of the chest remained unchanged.

### Blood Counts

Dates	Hemoglobin per Cent	Red Blood Cells	White Blood Cells	Percentage of											Platelets
				Polymorphonuclears	Small Lymphocytes	Large Lymphocytes	Large Mononuclears	Eosinophils	Basophils	Transitionals	Neutrophil Myelocytes	Eosinophil Myelocytes	Normoblasts	Megaloblasts	
2/15/33	82	4.6	8,300	48	22	14	0	3	0	0	0	0	0	0	
2/23/33	80	4.7	3,900	4	53	26	0	2	0	12	0	0	0	0	
2/24/33	80	4.6	5,200	1	64	24	0	0	0	11	0	0	0	0	82,800
2/25/33	80	4.6	8,700	4	79	11	0	0	0	6	0	0	0	0	63,200
2/26/33	80	4.7	7,700	4	78	12	0	2	0	4	0	0	0	0	78,200
2/27/33	80	4.7	12,400	7	76	9	0	4	0	3	0	0	0	0	102,000
2/28/33	82	4.7	7,300	18	54	11	0	5	0	9	2	1	0	0	216,000
3/1/33	80	4.6	10,700	21	60	8	0	4	0	0	0	1	0	0	225,000
3/2/33	80	4.6	6,900	37	48	5	0	4	0	5	1	0	0	0	2,000,000
3/3/33	85	4.5	7,300	35	46	6	0	4	0	9	0	0	0	0	310,000
3/4/33	85	4.0	9,800	47	40	5	0	2	0	6	0	0	0	0	340,000
3/6/33	85	4.0	8,200	48	41	5	0	2	0	4	0	0	0	0	412,800
3/8/33	80	4.6	9,600	47	37	6	0	4	0	6	0	0	0	0	414,400
3/10/33	80	4.6	8,100	57	31	5	0	3	0	4	0	0	0	0	474,500
3/13/33	80	4.6	9,100	47	37.5	7	0	4	0.5	4	0	0	0	0	420,800
3/15/33	80	4.6	8,100	54	31	5	0	3	2	5	0	0	0	0	437,000
3/17/33	85	4.6	8,800	33	40	9	0	5	0	4	0	0	0	0	456,000
3/24/33	80	4.6	9,800	34	58	4	0	2	0	2	0	0	0	0	460,000



The rise in polymorphonuclear leukocytes is shown by the solid line; the rise in platelets by the broken line.

large lymphocytes 22 per cent, transitionals, 11 per cent, moderate achromia. Examination was otherwise negative at this time.

A diagnosis of toxic leukopenia was made and, because of the success which Jackson and his co-workers have had with pentnucleotide, we telegraphed for a supply by air mail. It reached us the following morning and at 11:30 a. m. the child was given a 3 cc. dose followed by a 4 cc. dose that afternoon. As we could find no definite information for dosage in infants we based our dose on that of a 150 pound (68 Kg.) adult and then tripled this for several doses. All injections were

February 24, the lesion on the back was noticeably improved.

February 25, large red papules were found on the anterior part of the neck. The back and anterior part of the chest were improved.

February 27, the lesions of the neck were much larger. The back was draining purulent material.

March 1, the lesions on the back and chest were draining.

March 5, about 1½ tablespoonfuls of pus was obtained from one lesion in the neck.

March 8, an inflamed area showed up on the right buttock.

March 9, another abscess was found beneath the chin.

March 11, all lesions were improving.

March 13, another large abscess formed on the neck. An abscess on the right buttock was opened and a large amount of pus drained.

March 15, considerable pus was obtained from the abscess on the neck. That on the buttock was draining freely.

March 21, all abscesses were healed. The child made an uneventful recovery after this time and was discharged from the hospital, April 4, when his condition was normal.

### COMMENT

We report this case because of the very low polymorphonuclear leukocyte count, the marked response to pentnucleotide coming on the fifth day as is often expected, and the failure to develop lesions in the mouth which are frequently found in toxic leukopenia. It is interesting to note that when the polymorphonuclear count was low, the abscesses remained in a quiescent stage and when this count became normal the abscesses rapidly enlarged, several with large quantities of pus.

Recovery was apparently directly due to the specific action of the pentnucleotide on the bone marrow.

<sup>1</sup> All laboratory work was done by Dr. I. M. Walker, pathologist at Niagara Falls Memorial Hospital.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS ADOPTED THE FOLLOWING REPORT

H. A. CARTER, Secretary

### DIATHERMY

#### A Preliminary Statement to Acceptance of Diathermy Apparatus

Diathermy is the therapeutic use of a high-frequency electric current to generate heat within some part of the body. The current employed is greater in frequency than the maximum frequency for neuromuscular response and ranges from several hundred thousand to millions of cycles per second. The spark gap diathermy and the vacuum tube oscillator are the two general types of units manufactured. For the physical characteristics of high frequency currents see the Handbook of Physical Therapy, page 382.

For want of better terminology, diathermy may be divided into two divisions: medical diathermy and surgical diathermy. The term "surgical diathermy" appears to be becoming obsolete and the term "electrosurgery" is taking its place.

Medical diathermy is the production of heat for therapeutic purposes in body tissues, insufficient in amount, however, to produce temperatures high enough to destroy the tissues or impair their vitality. The available evidence indicates that the therapeutic effects are limited to the heat produced. The reader is referred to the Handbook of Physical Therapy or other Council accepted publications for the therapeutic indications of diathermy currents.

Medical diathermy cannot be considered a specific cure for pneumonia. Many physicians have used it and believe it to be a helpful therapeutic adjunct. One fairly constant response to the use of diathermy in pneumonia is the relief of pain. The degree and duration of this relief vary in different patients. Further clinical evidence must be accumulated to substantiate its efficacy for pneumonia.

Hyperpyrexia, the elevation of body temperature by artificial means, is still undergoing investigation. Here again further clinical evidence must be accumulated to substantiate its efficacy in the treatment of disease.

The following are some of the special safety rules for medical diathermy as given in the Handbook of Physical Therapy:

Before applying electrodes inspect carefully the parts to be treated to make sure that the continuity of the skin is nowhere broken and that the heat sensation of the patient is normal.

Before turning on the current from the main inlet inform the patient that all the sensation he can expect is that of mild heat. Instruct the patient to report any uncomfortable faradic sensation, pricking or burning at once.

Do not try to raise the current to the maximum amount of toleration during the first few treatments. Patients often are burned in their endeavor to show how much current they can stand. Remember the principle that a moderate amount of heat applied for a longer period is more effective than pushing up to the limit of tolerance for a shorter period.

If at any time during the treatment the patient complains of an uncomfortable sensation anywhere, turn off the controls, shutting off the main current inlet in case of emergency and if necessary take off and inspect and reapply the electrodes. When inspecting or adjusting electrodes be sure that the current is turned off and increased gradually again after such a procedure.

Do not leave the patient alone during treatment unless arrangements have been made so that the patient himself can turn off the current at any time.

Medical diathermy is contraindicated (1) in acute inflammatory processes such as acute non-draining cellulitis, acute arthritis characterized by infection, and acute pelvic infection; (2) in any condition in which there is a tendency to hemorrhage, such as a gastric ulcer, and (3) in those areas in which the appreciation of heat has been impaired or lost as in certain peripheral nerve injuries. It is also contraindicated in diseases or injuries in which simpler methods of applying external heat give satisfactory results.

Surgical diathermy is the use of high frequency electric oscillations in such a way that animal tissues are destroyed. By adjusting the widths of the spark gaps or inductance of the high frequency oscillatory circuit and selecting the proper terminals

electrocoagulation and electrodesiccation currents may be obtained in a spark gap machine.

Electrocoagulation is the coagulation of tissues by high frequency current. The heat producing the coagulation is generated within the tissues to be destroyed.

Electrodesiccation is the drying up of cells and tissues by means of short high frequency electric sparks.

The advantages of electrosurgery lie in effective destruction in loco of tissues that it is desirable to eliminate. This manifestly includes many forms of malignancy.

Hemostasis is easily effected in severing vessels up to about 1 mm in diameter either by the application of the coagulating electrode direct or by the intermediary of a well pointed hemostatic clamp, isolating the vessel.

Although the surgical removal of tonsils is to be preferred in certain selected cases the electrosurgical method has proved of value in tonsillectomies in patients presenting contraindications for ordinary surgical procedures such as cardiac disease and advanced age. The destruction of the tonsil is effected in several stages by applying the current alternately first to one side and then to the other, at intervals of one or two weeks. Such patients are usually ambulatory. The method is by no means simple and only skilled surgeons should attempt it. Those operators unfamiliar with the intensity of the high frequency currents and their depth of penetration may easily carry destruction into deep-seated structures adjacent to the disease areas. Especially is this true of blood vessels (a carotid for example) leading to and from the part of traversing neighboring tissues.

For further comments on electrosurgery the reader is referred to the Handbook of Physical Therapy, page 402, or other Council accepted publications.

From time to time the Council will report on the investigation of diathermy machines manufactured by various companies.

## Council on Pharmacy and Chemistry

### REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
PAUL NICHOLAS LEECH, Secretary

#### ALPHA-LOBELIN NOT ACCEPTABLE FOR N N R.

Alpha-Lobelin is an alkaloid of *Lobelia inflata* (distinguished from beta-lobelin and lobelidine) marketed by Ernst Bischoff Company, Inc., in the form of the hydrochloride in ampules containing  $\frac{1}{16}$  grain and  $\frac{1}{320}$  grain. The firm presented the product for consideration of the Council in 1925. The Council adopted a report postponing further consideration because of insufficient evidence of the therapeutic value of the drug. The Council also adopted a report recommending the publication of a preliminary report on Alpha-Lobelin. This preliminary report (*THE JOURNAL*, Aug 27 1927, p 693) calls attention to the numerous incomplete and usually uncritical, clinical reports which have appeared. Special attention is called to a partial list of hospitals using Alpha-Lobelin in which 183 hospitals and institutions in the United States and Canada were enumerated as using this substance. The Council corresponded with a considerable number of these institutions in order to learn the results of their experience with Alpha-Lobelin. One of these reported that it had been used twenty-four times in moderate asphyxia neonatorum, or markedly delayed breathing, and that with the exception of one case it had not been possible to attribute any beneficial results directly to the drug. The present referee points out that the drug was probably used by intramuscular injection, which method is criticized by Wilson. The Council's preliminary report also states that the paper by Norris and Wells represents the most complete and critical report, both experimental and clinical, that has appeared on the subject. While the report was being considered, the Council's attention was called to the sensational newspaper reports of the work of Camp was cited.

as showing that the pharmacology of Alpha-Lobelin is closely similar to that of nicotine, that an analysis of its action shows that it exerts a weak nicotine action throughout the body.

Ernst Bischoff Company Inc., requested further consideration of Alpha-Lobelin (July 20, 1932), and submitted 108 pieces of advertising. These vary from a leaflet of only a few words up to a volume of 191 pages. Many of these pieces of advertising consist mainly of mere repetitions, and nearly all of them contain citations from the same authors together with reproductions of two tracings one of which was made by Behrens and Pulewka. The Council's referee reported that he had read many of the articles but could not afford the time required to read all of them with the innumerable repetitions of the work of Wieland or Behrens and Pulewka oftentimes introduced in such a way that it is impossible for the casual reader to know whether a given statement is quoted or made by the author. Among the advertising is a blue covered paper circular of forty pages. In this Behrens and Pulewka's tracing, showing resuscitation in carbon monoxide poisoning is repeated five times, another set of tracings three times, and a pair of curves by Wieland and Mayer are repeated twice in such a way that its origin is not clear. This advertising contains what purports to be six papers written wholly or in part by Kurt Peters of New York, nearly all of which are stated to have been read before the New York Academy of Medicine, but much in these articles consists of repetitions of the general statement made in the first section of the report presumably by the manufacturer, sometimes verbatim without credit. Several of the articles in this blue book are carelessly written and bear earmarks of having much of the material supplied by the manufacturer. On page 5 occurs *lobelia inflata*, on page 26 occurs '*lobelia in flata*'. Similarly it is stated on page 23 that Alpha Lobelin was prepared by the chemist Heinrich [should be Heinrich Wieland] and studied pharmacologically by his brother Hermann. Reichle states (page 24) that

The pharmacologists Behrens and Pulewka asphyxiated twelve cats with carbon monoxide. The respiratory movements and the blood pressure were recorded on a kymograph. The time intervals were 30 seconds. The arrow shows the shutting off of CO and the supply of air. The respiratory curve did not improve. It showed every 30 seconds a deep sigh and 8 to 9 very slight breaths. Death seemed to be inevitable. At this moment Alpha Lobelin 0.002 g was injected. Within 1/4 minute 16 very deep breaths per 30 seconds were recorded. Blood pressure did not change. In all of these twelve cases Alpha Lobelin successfully resuscitated.

As a matter of fact, the tracing shows that the depth of respiration had begun to increase and the blood pressure was not falling at the moment that the lobelin was injected and that the respiration continued to increase after the injection. The tracing shows no essential change in blood pressure. Behrens and Pulewka (*Klin Wchnschr* 3 1677 [Sept 9] 1924) state that they used Alpha Lobelin on twelve cats, that invariably there was excitation of respiration, that as a rule the cats were saved and that only in those cases in which the carbon monoxide had been continued so long that the blood pressure had fallen low did the animals die. [Cf last sentence of Reichle's just quoted.] In a personal communication Reichle stated that he used the term 'resuscitated' not with regard to the ultimate recovery of the animals but with reference to the respiration. He further stated that further experience has necessitated considerable modification of his earlier views and that he regrets the continued circulation by the agents, of his now antiquated review, which was done without his knowledge. He now holds that the statement "It distinguishes itself by being void of all stimulation of the vomiting center such as the crude drug has" has now been disproved. The foregoing is cited merely as evidence that much found in this book is of the uncritically "promotional" type.

The first article in the blue-covered book, which is unsigned and is presumably made by the manufacturer, states that massive doses were not fatal in animal experiments, that the absence of toxicity is due to the fact that Alpha-Lobelin is soluble only in low concentrations. The Council's referee believes this statement to be dangerous in view of the fact that Alpha-Lobelin is recommended for intravenous injection. It is recommended directly or by inference for the treatment of carbon monoxide poisoning, but it is almost certain that Alpha Lobelin is of much less value in severe poisoning with

carbon monoxide than is oxygen, and the referee believes such recommendations to be distinctly dangerous. One of the leaflets is entitled 'Life-Saving Action of Lobelin Ingelheim in Pneumonia' a misleading and dangerous statement. Even more misleading are several of the leaflets devoted to the report of a case of severe alcohol poisoning cured by Lobelin Ingelheim. Peters states

Based upon the pharmacologic findings of exhaustive tests Alpha Lobelin is clearly indicated in all forms of central respiratory depression either partial or complete.

This is so obviously misleading and dangerous that it does not call for comment. The advertising contains the statement many times repeated that Alpha-Lobelin in contrast to the older amorphous lobelin is not emetic. The following quotation is made from Reichle (page 23, blue covered book)

It distinguishes itself by being void [sic] of all stimulation of the vomiting center—such as the crude drug notoriously has—and by its specific and extremely powerful and reliable action upon the respiratory center.

Attention is called to the later statement of Reichle quoted above. The advertising is based largely on the investigation of Wieland but it is less conservative than Wieland and Mayer (*Arch f exper Path u Pharmacol* 92 195 1922), who state that while lobelin influences the morphine depression of the respiratory center easily it influences that of urethane less, and that of chloral hydrate much less (*verhältnismässig schwer*). Their experiments were conducted on rabbits, and they state that large doses cause paralysis of the respiratory center, that the highest doses cause tonic clonic convulsions of cerebral origin but that this is induced only by intravenous injection.

Dreser (*Arch f exper Path u Pharmacol* 26 237, 1890) states that alkaloid lobelin is the only active constituent of *lobelia inflata* that it causes paralysis of respiration in mammals that it abolishes voluntary movement in the frog while it increases reflex excitability, that it paralyzes the vagi in the frog heart like nicotine, that the most prominent action in the mammal is a powerful stimulation of respiration, that the depth and rate of respiration and the force of the muscles innervated from the respiratory center increase. Dreser calls attention to the use of lobelia as an emetic in the United States.

Edmunds (*Am J Physiol* 11 79, 1904) states with reference to lobelin

In warm blooded animals (cats and dogs) the main effects of small doses are due to the powerful emetic action of the drug most of the symptoms being secondary to the vomiting which is due to action on the medulla. In larger doses muscular twitchings are followed by tonic convulsions and death. The drug is a powerful respiratory stimulant in small doses and in large quantities causes death by paralyzing the respiratory center.

Norris and Weiss (*J Pharmacol & Exper Therap* 31 43 [May] 1927) studied the actions of Alpha-Lobelin as a respiratory stimulant in (a) morphine poisoning, (b) poisoning by derivatives of barbituric acid and chloral, (c) poisoning by combination of morphine and of barbituric acid derivatives (d) carbon monoxide poisoning, (e) increased intracranial pressure.

In contradiction to Wieland and Mayer, Norris and Weiss state that Alpha-Lobelin produces effects in unanesthetized rabbits and cats similar to those observed by Edmunds with amorphous lobelin. They report that the fatal dose for the rabbit is about 10 mg per kilogram by the vein, that intravenous doses of 2 mg per kilogram cause clonic convulsions followed by rapid and shallow breathing, that normal animals are more sensitive to the stimulating effect of Alpha-Lobelin than those with respiratory depression, and that when the respiration is depressed other functions related to the medullary centers are also disturbed and the effect of the drug may be altered. They observed its effects on twenty-one men, including themselves. They state in the summary and conclusions that the pharmacologic properties of Alpha-Lobelin are essentially similar to those of the amorphous impure alkaloids or extracts of *lobelia inflata*, that the emetic respiratory and vasomotor actions of Alpha-Lobelin are similar to those of nicotine, that the mixture of carbon dioxide and oxygen is a more efficient and a safer respiratory stimulant than Alpha-Lobelin.

In marked contrast to the tone of the greater part of the literature previously cited is a paper by Wilson on the treat-

ment of asphyxia neonatorum by the injection of Alpha-Lobelin into the umbilical vein (A Preliminary Report *Am J Obst & Gynec* 16 379 [Sept.] 1928) Wilson states that a larger number of cases are necessary before definite conclusions can be drawn but that this preliminary report is presented in order to draw attention to the use of this drug in the manner which he describes. Wilson cites various authors who have observed spasms which, however, were attributed to impurities the Council's referee points out that Walbaum (*Arch f exper Path u Pharmacol* 116 1 1926) reported that two specimens of Lobelin-Ingelheim examined by himself caused strychnine-like convulsions but that twenty eight other specimens did not. Wilson's article is conservative and the referee believes that he has shown that Alpha-Lobelin is sometimes useful in asphyxia neonatorum. The referee has been informed that Alpha-Lobelin is now used widely for stimulating the respiration of the new-born.

It has long been known that moderate doses of lobelin like nicotine, stimulate respiration markedly. In fact, extraordinarily small doses of nicotine cause increased respiration in the frog, but neither nicotine nor lobelin has established itself as a respiratory stimulant in a greater number of cases, in which carbon dioxide and oxygen are now employed.

In accordance with the foregoing discussion and the referee's recommendation based thereon the Council declared Alpha-Lobelin unacceptable for New and Nonofficial Remedies because it is marketed with unwarranted therapeutic claims.

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMOTION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

### QUAKER BRAND PUFFED RICE

**Manufacturer**—The Quaker Oats Company, Chicago

**Description**—Ready-to eat cooked and puffed polished rice

**Manufacture**—Polished whole rice kernels are cooked and steamed in a closed vessel called a "gun." When the desired pressure has been reached, the lock that seals the gun is quickly withdrawn and the door is forced open by the internal steam pressure. The quick release of pressure causes a sudden conversion into vapor of the moisture within the rice and puff it to light, porous grains. The puffed rice is screened dried to 2 per cent moisture content, and packed in paraffin bags in cartons.

Analysis (submitted by manufacturer) —		per cent
Moisture		2.0
Ash		0.4
Fat (ether extraction method)		0.4
Protein (N $\times$ 6.25)		6.2
Crude fiber		0.5
Carbohydrates other than crude fiber (by difference)		90.5

**Calories**—3.9 per gram 111 per ounce

**Claims of Manufacturer**—The rice is steam exploded to eight times normal size.

### BETTY JANE FLOUR (BLEACHED)

**Manufacturer**—The Robinson Milling Company, Salina, Kan.

**Description**—Hard winter wheat patent flour bleached

**Manufacture**—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with nitrogen trichloride (one seventh ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one half ounce per 196 pounds).

**Claims of Manufacturer**—For general baking

### BABY RUTH LEMON, LIME AND ORANGE DROPS

(ADDED COLOR AND ACID)

**Manufacturer**—The Curtiss Candy Company, Chicago

**Description**—Confection drops containing sucrose, corn syrup, tartaric acid, lemon, orange or lime oils and colors certified by the United States Department of Agriculture.

**Manufacture**—The sugar and corn syrup are cooked together under reduced pressure and admixed with the acid and the respective flavors and colors. The entire mass is thoroughly pulled and worked until a uniform distribution of the color is obtained. The batch is placed in a spinning machine and spun directly into a "drop" or "stamping" machine, where the individual drops are turned out, cooled in a cooling tunnel, and automatically packaged.

Analysis (submitted by manufacturer) —		per cent
Moisture		1.0
Ash		0.1
Fat (ether extract)		0.7
Protein (N $\times$ 6.25)		0.0
Reducing sugars as dextrose		20.0
Sucrose (copper reduction method)		56.1
Dextrins (by difference)		98.2

**Calories**—4.0 per gram 114 per ounce

- 1 MAPLESOTA FLOUR (BLEACHED)
- 2 JERSEY LILY FLOUR (ROLLER PROCESS) (BLEACHED)
- 3 THE GREAT MADEIRA'S BEST FLOUR (BLEACHED)
- 4 GARLAND FLOUR (BLEACHED)
- 5 MISS MINNEAPOLIS FAMILY PATENT FLOUR
- 6 COMMANDER PATENT FLOUR
- 7 FAIRYLITE PATENT FLOUR

**Manufacturers**—

- 1 Commander Milling Company
- 2 Empire Milling Company
- 3 Northland Milling Company
- 4 Stokes Milling Company
- 5 Minneapolis Milling Company
- 6 Commander Milling Company
- 7 Buffalo Flour Mills Corporation

Subsidiaries of the Commander-Larabee Corporation, Minneapolis

**Description**—Hard spring wheat patent flour, bleached

**Manufacture**—Selected hard spring wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (three-fourths ounce per 196 pounds).

**Claims of Manufacturer**—For commercial baking and family use.

### LUXURY BREAD WITH SUNSHINE VITAMIN D

**Manufacturer**—Spaulding Bakeries, Scranton, Pa.

**Description**—A white bread prepared by the sponge dough method containing an added special nutrient vitamin D equivalent to the vitamin D of three teaspoonfuls of standard cod liver oil for each 24 ounces of baked bread (140 vitamin D units defined by the Council on Pharmacy and Chemistry, New and Nonofficial Remedies, 1932, p. 424) and manufactured under license granted by the General Baking Company, the same as Spaulding's Sunshine Vitamin D Bread (THE JOURNAL, March 12, 1932, p. 888).

### WINFIELD SUPREME BRAND UNSWEETENED EVAPORATED MILK

**Pacler**—The Page Milk Company, Merrill Wis.  
**Distributor**—Winfield Wholesale Grocery Company, Wichita, Winfield, Kan.

**Description**—Canned unsweetened, evaporated milk, the same as "Page Evaporated Milk Sterilized Unsweetened" (THE JOURNAL, May 30, 1931, p. 1872).

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 17, 1933

## DELAYED WOUND HEALING

Soon after the discovery of insulin and the demonstration of its specific value in the management of diabetes, recommendations as to the value of the product in other fields of therapeutics began to appear. Macleod observed long ago that, in the normal laboratory animal at least, the endogenous supply of insulin seems regularly to be at an optimum. This fact would tend to discourage the use of insulin in nondiabetic conditions. In the course of time, however, the possibilities of occasional advantage from the use of the hormone have been brought to light. A few months ago, Williams and Dick<sup>1</sup> of Chicago recorded their experience showing that glycosuria occurs in a large proportion of persons with acute infectious disease. The largest average amount of dextrose was excreted by the patients with influenza and miscellaneous acute infections. This glycosuria is accompanied by a lower carbohydrate tolerance as shown by dextrose tolerance tests and blood sugar curves both in acute infectious diseases and in experimental infections in animals. Administration of insulin improves the dextrose tolerance in acute infections. According to Williams and Dick, the action of insulin in improving the carbohydrate tolerance in acute infections is analogous to its similar action in diabetes mellitus. In many instances the severity of the disease and the degree of reduction of tolerance could be correlated, and in patients having one contagious disease following another there was marked reduction of tolerance. This suggests a probable important factor in the etiology of diabetes. The recovery of tolerance following injury by infection is explained by immunity to the infecting organism and by regeneration of the islets of Langerhans. The latter occurrence has been demonstrated in cases of diabetes, in which the tolerance of the patient has been improved.

Comparable lack of dextrose tolerance in persons who might not ordinarily be classed as diabetic has more

recently been reported by Rabinowitch<sup>2</sup> of the Montreal General Hospital. Recalling the well known fact that the surgical wounds tend to heal slowly or not at all in the patient with uncontrolled diabetes, he has studied the dextrose tolerance of patients exhibiting instances of the slow healing of wounds. For example, in the case of so-called birth trauma a high incidence of abnormality in sugar tolerance was observed. Although wounds failed to heal at the normal rate prior to treatment, wounds would heal at the normal rate with diet and insulin therapy. Infection was present in some of these cases, but other usual conditions that might explain impaired healing of tissue were excluded.

The experience at Montreal indicates that the routine study of carbohydrate tolerance in cases of slow healing of wounds may be well repaid in many instances. Good results often follow the appropriate insulin therapy. Rabinowitch asks whether it is possible that many of the patients of the sort designated have diabetes, that glycosuria is not observed because the blood sugars are below the renal threshold for dextrose, and that the disease becomes obvious only when these persons are exposed to some injury or infection that causes further loss of carbohydrate tolerance. Longer experience will give a more decisive answer. It is fortunate to have the attention of clinicians drawn anew to the association between impaired carbohydrate metabolism and delayed healing.

## THE PERIODIC PHYSICAL EXAMINATION IN YOUTH

The protection of health through periodic physical examination, like international disarmament, has been accepted in principle with but little practical result. The plan was first proposed in 1861 by Dr. Horace Dobell, whose recommendations were ignored. It was again suggested in 1901 by Dr. George M. Gould. The effort toward popularization was officially endorsed by the American Medical Association in 1922, but commercial exploitation had begun before 1917. State and county medical societies, public health officials and insurance companies have done their utmost, yet the gain in popular favor represented by increased utilization is slight. For the most part, the American people have not translated their acceptance of the idea into action.

Perhaps one of the reasons why the examination of apparently healthy persons as a prophylactic measure has not been more popular is that too much emphasis has been placed on life extension and not enough on life enrichment. Certainly, there is little good evidence that periodic examination will appreciably lengthen the life span. There are too many factors involved in longevity, heredity among others, which cannot be influenced by such a prophylactic measure. Moreover, too much emphasis has been laid on the examination of the appar-

<sup>1</sup> Williams J. L. and Dick G. F. Decrease Dextrose Tolerance in Acute Infectious Diseases. Arch Int Med 60: 801 (Dec.) 1932

<sup>2</sup> Rabinowitch I. M. Simultaneous Respiratory Exchange and Blood Sugar Time Curves Obtained in Apparently Nondiabetic Patients with Nonhealing Wounds. Arch Surg 26: 697 (April) 1933

ently healthy adult and not enough on the necessity for beginning health supervision at the beginning of life. In middle life, little can be expected, perhaps, aside from a discovery of harm already done, and possibly a tardy economy in the expenditure of remaining resources of health.

If the periodic health examination is to be popularized among young persons as a worth while practice for the enrichment of life, it must be offered on a different basis. The conception of future health makes little or no appeal to youths of high school or college age, who as a rule have abundant health and cannot be induced to worry about losing it. The child, still under closer control of parents, is more likely to have health supervision. The adult, sobered by responsibility for home and family, will protect his health if he is intelligent, and may be expected to respond to an appeal based on reason.

The Boy Scouts of America have a phrase in their oath, "a scout keeps himself physically strong and mentally awake." Among their merit badges are some pertaining to personal health, public health and first aid, to say nothing of the numerous others which have an incidental and therefore relatively painless health significance in that they encourage outdoor life and physical fitness indirectly. Among the principles of the Camp Fire Girls is an alliterative adjuration, "Hold on to Health," and this is given practical expression through the encouragement of activities that especially promote the improvement of physical efficiency.<sup>1</sup> The 4-H—Head, Heart, Hands and Health—Movement is another which is encouraging the interest of young persons in health through an immediate and practical approach. These, of course, are not all, they are cited merely as examples of how the conception of periodic health inventories is being translated—as it must be if it is to succeed—into terms that give the idea an immediate applicability and attractiveness.

Blanks for the recording of the periodic health examination have been prepared by the American Medical Association<sup>2</sup> and by state and county medical societies. A blank just issued by the Camp Fire Girls organization drops all formality. It talks about "family tree" instead of "family medical history," gaily and intimately records the facts about "grandpa" and "grandma" on both sides of the family, and interlards the dull recital with gay little line drawings in the well known "match-man" manner to illustrate brothers and sisters living or dead. Moonfaces with appropriate curves, up or down as the case may be, illustrate the individual's status as "very healthy," "pretty healthy," "fair" or "poor." Information about the teeth is recorded thus: "None are dead and none need filling, for my diet is right and I keep them clean and the dentist does the rest," or, "I'm sorry, but they DO

need." "Enough has been cited to show the spirit of this record. The thing has an urge for the young girl, who naturally doesn't like the apologetic "I'm sorry, but." "She is likely to go and do something about it, or, as the psychologist would say, she is motivated to action."

This interest of lay organizations in matters pertaining to health is hopeful. They need medical guidance, in order that their activities may be constructive. False hopes need not be raised. Erroneous impressions should not be fixed in minds from which they must later be eradicated. Available evidence indicates that large numbers of county medical societies are cooperating with movements of this character. Many lay organizations have national advisory committees on which the American Medical Association has representation. Through close cooperation between the medical profession and the public on a national, state and local basis will come the soundest progress toward better public health.

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#### ROENTGENOGRAMS THE PROPERTY OF THE PHYSICIAN

Roentgenograms made for a physician or a dentist, to assist in diagnosis and treatment, are not chattels in the sense that they can be bought and sold but are a part of the records of the case. In the absence of an agreement to the contrary, they belong to the physician or the dentist. This is the gist of the decision of the Municipal Court of Dayton, Ohio, Irwin W. Rohlf, acting judge, in *Leas v. Otto*, Aug. 4, 1932. The case<sup>1</sup> is the third in which a trial court has held that a roentgenogram made for the purposes of diagnosis and treatment does not belong to the patient unless there is an express agreement to that effect. As far as is known, however, no appellate court of last resort has passed on the question.

The plaintiff in the present case, a dentist, advised that a roentgenogram be made of the teeth of the defendant's wife. This was done, and a charge of \$10 was placed on the books. At a second visit, the dentist stated his diagnosis and advised as to the work that he recommended be done, and a charge of \$5 was made for this service. The defendant decided not to have the proposed work done but he demanded that the roentgenogram be given to him. The dentist refused. The patient's husband paid the \$5 charged for the diagnosis and advice but refused to pay for the taking of the roentgenogram. The dentist thereupon sued to recover the amount due. The facts were admitted, the only question being whether the dentist or his patient's husband, who was liable for the cost of dental services for the wife, owned the roentgenogram. Judgment was rendered in favor of the plaintiff-dentist, following

<sup>1</sup> Hold on to Health J. Health & Physical Education December, 1932

<sup>2</sup> Blanks for recording periodic physical examinations are available at 5 cents each postpaid, from the American Medical Association

<sup>1</sup> See also *Hurley Hospital v. Gage* Circuit Court of Genesee County, Mich. April 21 1931 J. A. M. A. 97:1542 (Nov. 21) 1931. *Thoecher v. Barnum and Pinkham* Circuit Court of Ingham County Mich. April 4 1932, Am. J. Roentgenol. 27:906 (June) 1932

an opinion that cannot be stated better than in the court's own words

The determination of this question involves the question of whether the x-ray film is a chattel subject to be bought and sold on the same basis as any other chattel. The court is of the opinion that an x-ray film is not a chattel in the sense that it can be bought and sold.

When a dental surgeon or a physician makes an x-ray of a patient he is required to have certain equipment in his office and to that end he purchases the x-ray machine itself and in the making of an x-ray film for a patient he pays for the material that goes into the making of said x-ray film or picture, and when said film or picture is produced it becomes a part of the record of that particular case and a part of the equipment of his office, said x-ray film or picture is of service and value only to the dental surgeon or physician who has knowledge and training in diagnosing the particular case and is a part of the record of that particular case and of value in giving said dental surgeon or physician enlightenment in the treatment of said case.

In the making and reproduction of an x-ray film for a patient the dental surgeon or physician sells and the patient pays for, not the material that goes into the x-ray film but for knowledge and experience.

It is a fundamental proposition that the law will not make an implied agreement to transfer ownership of an x-ray film or picture from the person producing it to the patient in the absence of an express agreement to the contrary.

In this case there is no testimony that there was an express agreement to transfer ownership of the x-ray film from the plaintiff to the defendant. The plaintiff testified that it is customary that such films be retained by the person who has taken them. The court is of the opinion that the retention of said films by the person taking them is necessary as a part of his record concerning the case—retained on the same basis and on the same theory that a surgeon retains his temperature chart that he has made, or other record concerning the diagnosis or treatment of a case, and that as a matter of law it must be said that where x-ray pictures are taken under circumstances such as they were taken by the plaintiff in this case, there is no implied undertaking to turn those films over to the patient.

The court is further of the opinion that the protection of the person taking said films depends largely on the proper preservation of the same and such films should remain with said dental surgeon or physician. The interpretation is the all-important thing in connection with an x-ray examination. The film itself is simply the basis of the interpretation.

## Current Comment

### POSITIVE FACTORS IN THYROID HYPERPLASIA

The pathologic manifestations of endemic goiter are at present attributed almost universally to a diminished supply of iodine to the affected person. On this basis the malady may properly be classified as a deficiency disease. Marine, who has made extensive studies in this field of investigation, believes that the morbid anatomy of endemic goiter involves, first, a diminished iodine store and, secondly, a period of stimulation with hyperplasia.<sup>1</sup> There are several well known investigators who have repeatedly insisted that positive factors play an important part in thyroid hyperplasia, and that they are quite as important as any shortage in the iodine intake. Indeed, one writer has argued that atrophy of the thyroid should result from a lessened supply of iodine, as this element tends to stimulate the

gland. Two years ago, Hellwig<sup>2</sup> expressed the view that an increased intake of calcium chloride represents a positive agent, which, if presented simultaneously with a shortage of iodine, will bring about thyroid hyperplasia. The problem should, of course, be readily subject to experimental investigation on laboratory animals. The ubiquitousness of iodine in effective traces in nongitrous areas makes experiments difficult and uncertain in their outcome. Nevertheless, a study carried out at the College of Physicians and Surgeons in New York by Hibbard<sup>3</sup> on rodents tends to support the existence of positive as well as deficiency factors in the development of thyroid hyperplasias. Albino rats fed on a diet low in iodine in a relatively nonendemic region failed to have thyroid hyperplasia. On the other hand, administration of calcium chloride, combined with a diet low in iodine, produced a definite thyroid hyperplasia in a large percentage of the experimental animals. Hyperplasia was not observed in experimental rats fed on a diet high in calcium lactate and low in iodine. Definite changes in the thyroid gland, similar to those obtained by a diet high in calcium chloride and low in iodine, were found in rats fed on a diet high in sodium chloride and low in iodine. Hibbard asserts that, although his experiments are not yet entirely convincing, they tend to indicate that the positive element was the chlorine and not the calcium ion. Whether this action is specific for chlorine or may occur with other halogens is not absolutely proved in this study.

### PATHOGENICITY OF VARIANTS OF B. TUBERCULOSIS

During the last decade it has become increasingly evident that pure cultures of pathogenic bacteria may "dissociate," "mutate" or "degenerate" into two or more morphologic or antigenic "variants," "strains" or "involution forms," and that somewhat similar microbial "phases," "life cycles" or "transformations" are demonstrable during the course of natural infections. Thus far, studies of microbial "plasticity" have been largely morphologic. Working with a well known strain of the avian tubercle bacillus, Drs. Winn and Petroff<sup>4</sup> of the Trudeau Sanatorium readily obtained three relatively stable test-tube "dissociates," easily differentiated from one another by differences in colony structure. These variants they designate as the smooth (S), rough (R), and flat-smooth (FS) types, to which they added a fourth, or chromogenic (Ch), variant, obtained by subjecting an S culture to a relatively high temperature. Sixty-one young fowls of approximately the same size and age were inoculated intravenously with graded doses of these four "dissociates." Detailed clinical histories were kept, including repeated differential blood counts, followed by careful histologic studies of all inoculated birds. Their general conclusion is that the leukocytic response to S and FS infections is of the acute tuberculosis type, while the response to R and Ch infections is characteristic of

<sup>2</sup> Hellwig C. A. Iodine Deficiency and Goiter. Arch. Path. 11: 709 (May) 1931.

<sup>3</sup> Hibbard J. S. Experimental Thyroid Hyperplasia. Arch. Surg. 26: 648 (April) 1933.

<sup>4</sup> Winn W. A. and Petroff S. A. J. Exper. Med. 57: 239 (Feb) 1933.

chronic healing tuberculosis The individual tubercles formed by the S infection were found to be of the acute, or "toxic," type The FS tubercle was of the less acute, foreign body type. The R and Ch tubercles were "relatively benign" The differences were clear cut, in spite of the tendency of the four variants to be sometimes unstable in vivo, a characteristic influencing both the advancement and the retrogression of the experimental lesions Dissociated variants of the human and bovine strains of *Bacillus tuberculosis* are much less stable than those of the selected avian culture

## Medical Economics

### THE COLLECTION PROBLEM

The collection problem is peculiarly difficult in the medical field Ethics, professional tradition and present practices have introduced so large an element of philanthropy that debts for medical service seem to have lost the sharp sense of obligation that distinguishes commercial debts The imperative necessity of preserving close personal relations between patient and physician increases this effect

Business sagacity proverbially is seldom associated with science and art the good physician is often a poor collector Attempts to place the handling of delinquent accounts with commercial collectors only aggravates the whole situation, often defrauding the creditor and enraging the debtor, and profiting only the unscrupulous collection agency

Estimates of the losses of physicians through failure to collect vary from 15 to 50 per cent of charges Since the estimate of the amount paid to physicians is over a billion dollars annually it follows that probably no less than \$300,000,000 is lost each year through inability to collect payment for work done.

As a first step in a study of the collection problem a questionnaire was sent to all secretaries of county medical societies The replies differed distinctly from those received to other questionnaires Usually replies differ widely, reflecting divergent opinions, local conditions, and so on, but this time the replies were so nearly unanimous that it became evident that little would be gained by analyzing the total of nearly 2,000 questionnaires Examination of a sufficiently large sample to be representative showed that about one half of the physicians utilized the services of general collection agencies

The second question asked for "a list of the collection agencies that have been fair in their dealings and have given general satisfaction to the majority of your local society members" Practically every agency listed in reply to this question was a local one Scarcely a name of a general national agency was mentioned

The third question asked for a listing of "those collection agencies that have been found to be tricky, inequitable and unsatisfactory to your members who have used them" The most common reply was "All" or "Every one," although a large number were specifically named

The replies to these three questions demonstrate that while about one half of the physicians in the country have used collection agencies, the only ones that have been satisfactory have been local organizations, where personal relations and supervision are possible This means further that a large percentage of the physicians have had dealings with "tricky, inequitable and unsatisfactory" agencies

A number of replies to the second question endorsed, sometimes with enthusiastic emphasis, agencies operated under the direct supervision of the physicians themselves This suggested the probability that these physicians were at least approaching a solution of this vexed problem of collections

Special letters were sent to those secretaries of county medical societies who reported the existence of such professionally controlled agencies Sufficient replies were received to indicate that these societies seemed to be pioneering the way to a greatly

improved method of handling physicians' accounts It is believed that a study of the methods used will be helpful to physicians in other localities

Ten of the organizations reporting the details of their form and operation have been in existence for a sufficiently long time to speak from experience as to the success of their methods. The following descriptions of the workings of some examples of such organizations are summarized from letters and other information furnished by the secretaries of the county medical societies or from the managers of the organizations

#### THE PHYSICIANS AND DENTISTS BUSINESS BUREAU OF TACOMA, WASH

The Physicians and Dentists Business Bureau of Tacoma, Wash., is a corporation organized not for profit, with no capital and no stock, whose owners are the members

The bureau had its origin in a committee appointed by the president of the county society to investigate the possibility for the formation of such a bureau The committee worked out a number of plans, reported to the society at a special meeting, and was authorized to proceed to form a corporation to engage in four general activities (1) collection of past due accounts, (2) maintenance of credit statistics, (3) operation of telephone exchange and (4) public relations A lav manager was employed to organize the company and set up a going concern Space was rented in the Medical Arts Building, and membership solicited A fee of \$5 was levied for admission into the corporation This might be called an initiation fee. Any member of the medical or dental societies in good standing is eligible to be a member of the bureau on payment of this fee The fee is not annual but is levied only once, at the time of entering into membership

It is important in the establishment of bureaus of this nature to combine as many services as is practicable under one staff and one organization in order that the resulting economies in operation and overhead will enable the bureau to render its services in competition with other commercial organizations It has been the experience of this bureau that the operation of the telephone exchange and nurses' registry can be associated with credit and collection service with a substantial saving over the probable cost of operating these organizations separately A considerable part of the clerical work of both organizations is done by the nurses at the exchange

The collection department employs a collection supervisor, an accountant who also handles the accounting for the exchange, a collector and a tracing department

The charges for collection are as follows accounts under \$10 or over one year old, 33½ per cent, under one year, 25 per cent, six months, 20 per cent, three months, 15 per cent

Present economic conditions have made it impossible to collect many accounts without unduly burdening many patients

When satisfactory evidence is offered that the patient cannot meet the obligation and is conscientiously endeavoring to do so, an application for an extension of credit is used The application form is an acknowledgment of the account and when properly filled out, is a financial statement of the debtor's condition and a promissory note to pay This is now resulting in the collection of accounts in proportion of about \$1 in cash collected to \$7.50 in notes signed. These credit application blanks are reviewed at periodic intervals, the frequency of which is determined by the individual account, and further treatment is given them as soon as necessary

The bureau employs an attorney, who renders any services requested by the bureau and advises the bureau and consults with its manager in all cases involving the law The attorney's remuneration is received from the fees that are allowed by the court in which judgment is obtained on accounts

The collection department has been able to operate efficiently While the present extreme depression of credit and the country-wide unemployment situation make it impossible to appraise the exact collection value of the bureau, nevertheless the bureau has succeeded in collecting accounts on a basis which compares favorably with its commercial competitors in this area The average commercial rate for collections in this district is now 48 per cent and the rates of the bureau are substantially less than this amount. The bureau cannot operate on its present rate schedule as a single unit and in present conditions except by combining the various activities of the bureau under one staff

MEDICAL AND DENTAL CREDIT ASSOCIATION,  
NORFOLK, VA.

The Medical and Dental Credit Association, Norfolk, Va., was organized and began operations in January 1930 with about sixty members. At that time a membership fee of \$10 was charged and 33 1/3 per cent on accounts collected by the association. The board of directors is elected from the membership which is restricted to ethical members of the medical and dental professions.

The first year, approximately \$24,000 was collected and the total, up to the present time, is approximately \$80,000 for a membership which now exceeds 150. The membership fee has been reduced to \$1 and the rates have been changed to conform with the prevailing rates charged by commercial agencies.

The amount that was collected directly is small in comparison to the amount received by the doctor in his own office through the influence exerted by the association.

At regular intervals a complete report of all delinquent accounts handled through the office is furnished in printed form and distributed to the membership, together with individual credit reports as requested by the members. The association is meeting with approval and is gaining membership continually. The accounts handled are investigated carefully and if they are deserving of charity the doctor is notified if debtors are able to pay for professional services steps are taken to force payment immediately. Debtors are also assisted in financing their accounts with the doctor.

## PHYSICIANS' BUSINESS BUREAU, MEMPHIS, TENN.

The Physicians' Business Bureau Memphis, Tenn. is not operated directly by the medical society but by a separate corporation owned and controlled entirely by members of the society. This corporation was organized in 1919 and began operating as a collection and rating bureau in May 1922. Since then it has handled the accounts of physicians, dentists and hospitals, has collected a little over a million dollars, and has disposed of twice that amount of "uncollectable" accounts.

At first a small membership fee was charged but it was found that the bureau could operate solely on a commission basis, which averages about 22 per cent. Business was begun with only \$900 capital stock paid into the organization. The large volume of business was obtained without a loss to any member and without any failures to turn over the money collected which is so common with commercial agencies. There is a settlement with the doctors every month when all amounts due are paid, less commissions for collections.

Out of the income that has been derived from commissions have been paid all expenses and a comfortable surplus set aside, which is now carrying the Bureau over a period that would have been embarrassing if not prepared for.

The question of opening a finance department to take care of patients that are entitled to loans to pay their medical expenses is being considered. If such a department is opened it will be under the direct supervision of a board of directors, and all of the stock will remain in the hands of the local medical profession.

## QUEEN'S MEDICAL BUSINESS BUREAU, INC., BROOKLYN

The Queen's Medical Business Bureau, Inc. of Brooklyn the stock of which is owned 100 per cent by the county medical society is a distinct corporation although the directors are trustees of the county medical society.

This business bureau supervises the use of space in the county medical building securing compensation proportionate to the time it is used by organizations allied in their activities to the county medical society. It also maintains a nurses registry under the supervision of a graduate nurse.

The collection bureau has been in operation for approximately two years. It has never made money nor has it during the last year been a source of expense. It is under a lay manager, who has a year's contract with the business bureau and any profit accruing goes into his pocket. This department has been of service to the members of the county society and has brought satisfactory results to certain members.

It has made collections of delinquent accounts not only for physicians but also for some of the private hospitals in the county. The rate is 50 per cent up to \$10 and 25 per cent thereafter.

On cases referred to a lawyer for the collection of the debt the charge is 35 per cent plus a small additional fee for serving of papers, and the like. Twenty-four hour credit reports on patients or individuals are also furnished on request. The delinquent is first sent several follow-up letters. If these are not effective, a collector, who is maintained by the department on a commission basis, is sent. If the collector is unable to produce results, these accounts are sent to a lawyer, who collects through correspondence or specific court action.

The greatest difficulty in the management of this part of the business bureau activity seems to be in securing reliable managers.

## DETROIT PHYSICIANS' BUSINESS BUREAU

The Wayne County Medical Society has maintained a physicians business bureau in Detroit since 1915. The Detroit Physicians' Business Bureau was organized as a cooperative collection service for the members and to act as a bureau for credit information. It is not incorporated. Originally, the society gave financial assistance to the bureau during the period of its "organization pains." However, it has been self-supporting for years and at present is a source of some small revenue to the society.

The bureau has its own business office, which is located for the convenience of its members, in the Wayne County Medical Society Building. It is under the management of a full time layman who is supervised by a committee of society physicians appointed by the president. The society has a contract whereby it is relieved of all financial responsibility. The special committee, or board of control, acts as arbitrator in any disputes between the bureau and the physicians and it also audits the books annually. One per cent of the gross collections is turned over to the society by the business manager as rental of the name "Detroit Physicians' Business Bureau," which is the property of the Wayne County Medical Society.

There is no monthly membership fee for the business bureau service. The physicians pay only a percentage on the money collected for them.

The bureau offers three services to every member: first, a delinquent account letter service, whereby a series of letters is mailed by the bureau to slow-pay patients to aid the doctor's collections (the cost is 5 cents for each letter); second, a collection service, which is a dependable help to the physician who wishes to have his older accounts adjusted or financed through the medium of a conscientious agency; third, the help of "the physician's bookkeeper" for doctors who desire an expert bookkeeper to keep monthly accounts, pay bills and collect current fees.

The official sponsorship and supervision of the county medical society are necessary to make a success of a cooperative bureau. If it is an integral part of the society's activity, the physician can place his confidence in it. This means more clients for the bureau, a proportionate decrease in overhead, and more efficiency at a lesser price. Again, more satisfactory results to both physician and patient may be expected from the use of a local collection agency over which some influence and control can be exercised.

Two definite benefits result from the presence of an official medical bureau: 1. Physicians refer their claims to the third party (the agency) at an earlier age, which prevents rapid deterioration of accounts. 2. "Nation-wide" agencies and "gyps" of all varieties are lessened as physicians prefer to place their confidence in their own bureau, thus thousands of dollars are annually saved the individual practitioner of medicine.

The bureau has successfully collected about one third of the accounts received.

## PHYSICIANS' CREDIT EXCHANGE, CHARLOTTE, N. C.

The Physicians' Credit Exchange was established Aug. 1, 1931, as a means of assisting the local medical library, but has since grown. Membership in this exchange includes membership in (1) the Mecklenburg County Medical Society, (2) the Medical Society of the State of North Carolina, (3) the Charlotte Medical Library Association, (4) the Merchants Association, (5) the Physicians' Credit Bureau, (6) the Physicians' Collection Agency, and (7) the local Doctors' Telephone Exchange.

The exchange has a group membership in the local merchants association. Through this, credit ratings on any person

in the community may be obtained together with the services of their collection department. Such a group membership is obtained for much less than individual membership would cost the individual doctors

The credit bureau consists of excellent files of names submitted by the local doctors to the secretary of the exchange. These names make up a list of delinquents, cross indexed, and information may be secured promptly. Additional information may be secured from the Merchants Association

The collection agency is a new feature and has scarcely had time to determine its real value. At present most of the accounts being submitted for collection are old and worthless. However many of the members have collected accounts which were considered as absolutely no good.

All of these services and memberships are secured for the rate of \$5 a month. About 75 out of a total of 115 physicians of the city are members. This gives an annual income of about \$4,500 which is more than sufficient to maintain the exchange and all its departments

#### PHYSICIANS' AND DENTISTS' CREDIT BUREAU, RICHMOND, VA.

The Physicians' and Dentists' Credit Bureau Richmond, Va., is owned and operated by the doctors and dentists. It furnishes information and handles collections for clients on a 25 and 50 per cent contingent basis, makes personal calls on debtors, and tries to collect the accounts in an amicable way if possible. However if not successful, a legal department with a competent practicing attorney in charge proceeds by legal action if necessary, to protect the clients interests. At this time there is a clientele of 180 doctors and dentists

#### MEDICAL-DENTAL HEADQUARTERS, SALEM, ORE

About three years ago, the local medical society at Salem, Ore., organized a bureau called the Medical-Dental Headquarters. Its purpose was to act as an information bureau, to disseminate health information to the public and to provide an organization of physicians which might function in any manner along economic lines. The establishment of the collection bureau was incidental and was taken as the only means whereby the bureau might be made self supporting.

Since the bureau could serve only physicians of Salem and nearby towns funds were not taken from the local society for its establishment but doctors were solicited to join the Medical-Dental Headquarters and contribute money for its support. After the first year the headquarters has been self supporting from its collection service. It performs these services only for members and charges them a percentage for collections made.

Control of the headquarters is under a medical-dental committee appointed by the medical society, together with a similar committee appointed by the dental society. There are six doctors and three dentists on this committee.

#### MEDICAL BUSINESS BUREAU, MILWAUKEE

In June 1931, the Medical Business Bureau, Milwaukee, opened under the direction of the society. The agreement at that time was that the society would purchase all equipment and records and that the business manager would operate the bureau as though it were his own business, paying all overhead expenses and receiving all profits up to a certain point, at which the society would participate in the revenue derived.

The bureau started off auspiciously and did well. In June, 1932 several banks were closed and from then on there were many difficulties and the manager became definitely discouraged. However, the society felt that the bureau was doing such good work that it should be continued and when the manager asked to be released another was procured. The results have been pleasing to the society.

At present some 250 physicians out of 700 use this service.

The policies of the bureau are under the direction of the Medical Business Bureau Committee, which through the executive secretary supervises the actual operation and the manager goes to it for assistance in straightening out difficulties.

#### UNSUCCESSFUL EXPERIMENTS

Not all the experiments have been successful, nor are the reasons for this always clear. The former manager of the

Nashville, Tenn., Physicians' and Dentists' Adjustment Bureau writes

Reg to advise that the bureau so far as collecting is concerned is out of business. The high rates of privilege tax forced us to close. We were required to pay \$900 per year and could not stand this. I was manager of this bureau and now I am managing a collection department for the professional men—doctors and dentists. In this way I am still collecting for the doctors and dentists but of course this does not have the same effect as being allowed to collect in the bureau's name however it is the best we could do.

In another city a bureau was organized and a secretary and attorney were employed, the former to be paid from money received by the county medical society from a contract for indigent care. The plan failed because

Several of the physicians who talked the loudest in favor of establishing the bureau have never turned in a single name of their delinquent debtors and I firmly believe they thought they would benefit by the other doctors making their patrons sore when they began to use some force. Then the business depression grew worse and the doctors have about quit handing in any names so I think we might write the word FINIS and call it a day.

The plan is good if they will all work and stick together but you know what happens when some will not cooperate it FAILS.

The following extracts from a letter from a manager of a less successful scheme show some of the difficulties of organization and operation

About two years ago in response to some agitation on the subject principally caused by several dishonest collection agencies preying upon the doctors of ——— this agency was formed. In order that no direct responsibility should fall upon the county society, it was placed under my direction as executive secretary.

Notwithstanding the fact that our collections were fully up to the average of other agencies there was not enough patronage from members of the society to make it a paying venture and it has continuously been in the red. As the demand for the service seems so small I have ceased advertising and we receive very few new accounts. It is here however if the members care to use it and it could be revived at any time.

We never furnished a credit rating to our members but have on file a large number of persons who are delinquents subject to the inspection of our members. We have never been asked for any credit information.

In some cases an affiliated organization is reported as giving satisfactory results, although in most cases there is actual control of these organizations by the county medical society, directly or indirectly. Some examples of these are given.

#### KANSAS CITY PROFESSIONAL BUREAU

The Wyandotte County Medical Society does not maintain its own collection bureau, but there is an organization known as the Kansas City Professional Bureau, which is very closely allied to the society with members from the society as directors. It charges a \$2 per month fee and 25 per cent on collections, which are personally supervised and is quite satisfactory. It also issues a bulletin monthly giving lists of all individuals owing physicians in the city and in addition has a move service whereby it gets all of the transfers and moves in the city. It also gives a list of the city court suits and the names of the individuals involved.

#### SAN JOAQUIN COUNTY, CALIF

The service in operation in San Joaquin County, Calif., is organized on a somewhat different basis and is described as follows by the secretary of the San Joaquin County Medical Society.

A gentleman with experience in collections and well known to members of the society presented a plan to the society and asked for their endorsement and support which was given him.

Members of the medical and dental societies were given an opportunity to enroll at a fee of \$3 per month they were to furnish whatever accounts they chose for collection on the additional percentage basis of 25 per cent on claims of \$10 and under and 10 per cent on all large claims. No claims were to be sued on without the permission of the owner of the claim.

Any member may have any information that is available as to the standing of patients whether they owe other physicians or dentists.

This bureau is a regular established licensed and bonded agency under the laws of the state of California and is so controlled and conducted. It makes regular monthly reports of all payments received and all other information that is of importance regarding a claim.

Our collection fees have been materially reduced the type of service is more in accordance with our desires and has given us an outlet for accounts that would not otherwise be given to the ordinary collector.

#### CONCLUSIONS

There are a few tentative generalizations that seem to be established by the experiments described. Control by the county medical society directly or indirectly appears desirable.

This can be obtained either by provisions for such control in the by-laws, by retaining ownership of the title of the collecting agency, or by confining membership in the agency to members in good standing of the professional organization.

The active cooperation of at least a majority of the county medical society should be assured before the plan is put in operation. One successful means of securing this is to ask a small membership fee at the beginning, which also assures the working capital required for the start.

Those plans seem to have succeeded best which charge approximately the same rates as commercial agencies and depend on an improved service, made possible by absence of any expense for soliciting accounts and increase of income through the prestige of professional connections to attract patronage. This enables the agency not only to be self-supporting and to accumulate sufficient surplus to carry it through a depression but also, when established perhaps to be a source of at least a small income to the county medical society.

If the collection agency is financially self-supporting it can offer other services, such as financing slow pay accounts and furnishing credit reports. There would appear to be some difficulty in finding lay managers who combine the requisite skill in collection methods with the attitude which the profession wishes to retain with the delinquent patients, yet this is absolutely essential to general satisfaction.

## Association News

### MEDICAL BROADCAST FOR THE WEEK American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

- June 20. Vaccination First Aid Kit.
- June 22. Three Fingered Poison.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

- June 24. Whooping Cough.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**Dr. Chandler Appointed Dean of Stanford Medical School**—Dr. Loren Roscoe Chandler, assistant clinical professor of surgery, Stanford University School of Medicine, San Francisco, has been appointed dean of the school, succeeding the late Dr. William Ophuls. Dr. Chandler, who graduated from the medical school in 1923, has been associated with the department of surgery since that time. He is 38 years of age and a native of California. He is a member of the board of directors of the San Francisco County Medical Society.

**Tribute to Dr. Soiland**—Radiology for May has been dedicated to Dr. Albert Soiland, Los Angeles, in acknowledgment of his achievements in radiology and in recognition of his sixtieth birthday. Dr. Soiland was born in Stavanger, Norway. He graduated at the University of Southern California Medical School, Los Angeles, in 1900, where, in 1904, he established a department of radiology. He was the founder of the American College of Radiology and at present is a member of the House of Delegates of the American Medical Association. He will represent the latter at the fourth International Radiological Congress, to be held in Zurich, Switzerland, in 1934. Dr. Soiland was a sponsor of the plan to

establish the Section on Radiology of the American Medical Association, and in 1926 was made its chairman.

### CONNECTICUT

**Dr. d'Herelle Resigns**—Dr. Felix d'Herelle has resigned as professor of bacteriology at Yale University School of Medicine, according to *Science*. Although born in Montreal, Dr. d'Herelle acquired his education in France. Before coming to the United States he was director of the bacteriologic laboratory of the quarantine service of Alexandria, Egypt, under the British government.

**State Medical Meeting and Election**—Dr. Ralph A. McDonnell, New Haven, was elected president of the Connecticut State Medical Society at its one hundred and forty first annual session, May 25, and Dr. Charles W. Comfort, Jr., New Haven, reelected secretary. The next annual meeting of the society will be held at Bridgeport May 23-24, 1934. Guest speakers included Drs. Hill Cook Spain, New York, on "Hypersensitiveness to Common Foods", Frederick W. O'Brien, Boston, "Dust Inhalation Diseases as Seen by X-Ray," and Julius Jarcho, New York, "Value of the Roentgen Ray in Gynecology." Local physicians included on the program were the following:

- Winthrop M. Phelps, New Haven, Rational Use of Light as a Drug.
- Douglas J. Roberts, Hartford, Practical Relationships of Irradiation to Medicine.
- Robert M. Lewis, New Haven, Study of Theelin in the Treatment of Gonorrheal Vaginitis.
- Philip G. McLellan, Hartford, Practical Consideration of Breast Tumors.
- Daniel C. Patterson, Bridgeport, Fractures of the Spine.

### DISTRICT OF COLUMBIA

**Dr. Merritt to Give Davidson Lecture**—Dr. Edwin A. Merritt will deliver the second Davidson Foundation Lecture, October 11, on "Roentgen Therapy in Hyperparathyroidism." The Davidson Foundation was established by the Medical Society of the District of Columbia in 1929 to provide for the lecture which is given every second year. The lecturer receives an honorarium of \$300. The foundation is a memorial to Edward Young Davidson who when president in 1916 conceived and led to completion the movement which provided a building for the society (*THE JOURNAL*, Nov. 14, 1931, p. 1472).

### IDAHO

**Personal**—Dr. Eugene L. Spohn, Coeur d'Alene, has received a two year contract as health physician of Kootenai County.

**Society News**—Research in medicine and surgery was discussed at the semiannual dinner meeting of the Southwestern Idaho District Medical Society, May 10, in Boise. Dr. Arthur C. Jones, president of the society, led the discussion.

**Annual Registration Due July 1**—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to be registered annually on or before July 1 with the Department of Law Enforcement, and at that time to pay a fee of \$2. If a licensee has not paid the annual registration fee by October 1, his license can be canceled and will be restored thereafter only on payment of the delinquent fees and a \$10 penalty.

### ILLINOIS

**Typhoid Epidemics**—Twelve cases of typhoid, with two deaths were recently reported in Clinton, and about forty-five cases at DeLand. The Clinton outbreak was traced to a church supper, April 4, where a woman, whose son was ill with typhoid, purchased a quart of ice cream and took it to the kitchen. All the persons who subsequently came down with typhoid ate of this. Two children whose mother took home to them what remained of the quart of ice cream were ill, while their father, who ate none, escaped. According to the state health department, a well in the school grounds may have been involved in spreading typhoid among the school children at DeLand.

### Chicago

**Dr. Gorter Gives Tuberculosis Lectures**—Dr. E. Gorter, head of the department of pediatrics, University of Leyden, Holland, gave a series of clinical lectures on "Tuberculosis in Childhood" at the University of Illinois College of Medicine, May 16-18 and May 20. These lectures were given under the Theodore B. Sachs Memorial Fund established by the Chicago Tuberculosis Institute.

**Safrine Placed on Probation**—A. J. Safrine pleaded guilty to violation of the medical practice act before Judge Dunne, March 24, and was placed on probation for one year, with the warning that the limit of the law would be imposed.

on him if he violated the medical practice act in the future. The warrant charging Safrine was issued Sept. 21, 1932, but the case was repeatedly continued. In 1930 Safrine, according to a newspaper report was sentenced to three months in the county jail and to pay a \$300 fine for a similar offense. At that time he was listed in the Chicago telephone directory as an 'M.D.' He was formerly a male nurse at Michael Reese Hospital, but the records of the American Medical Association fail to show that he ever was graduated by any reputable medical school.

**Medical Week at the Century of Progress**—During Medical Week, which is sponsored by the Chicago Medical Society and A Century of Progress, the following physicians will deliver addresses at 8 p. m., at the Hall of Science on the Fair grounds

June 19 James A. Britton Treatment of Tuberculosis. Chauncey C. Maher Causes of Heart Disease  
June 20 Edwin W. Ryerson Orthopedic Treatment of Infantile Paralysis Austin A. Hayden Conservation of Hearing  
June 21 Walter W. Hamburger, Heart Disease Julius H. Hess The Infant of Today Gilbert Fitz Patrick Cancer a Public Health Problem  
June 22 Walter H. Watterson, Modern Facts on Tuberculosis  
June 23 Philip H. Kreuscher The Ache in Your Back. Isaac A. Abt Pediatrics

#### RADIO TALKS

June 19 William Allen Pusey Purpose of the Medical Exhibits Herman L. Kretschmer Your Health and Your Doctor  
June 20 Franklin H. Martin One Hundred Years of Progress in Hospital Care  
June 21 Edward H. Cary Dallas Texas, Saving Your Eyes.  
June 22 Morris Fishbein Frontiers of Medicine.  
June 23 Francis Berger Trudeau Saranac Lake N. Y., Prevention and Care of Tuberculosis.

#### INDIANA

**Dental Building in Medical Center**—The cornerstone of the new dental school of Indiana University was laid, May 16. The first floor will be given over to general offices, lecture rooms, and laboratories for anatomy, chemistry and metallurgy, histology and dental anatomy, bacteriology and pathology, and pharmacology and physiology. Surgery rooms, x-ray department, clinics and general waiting rooms will be located on the second floor, while the main clinic will be on the third floor with junior and senior laboratories. The exterior of the building will be of Indiana limestone. The laying of the cornerstone marked the first meeting of the newly organized Indiana University Dental School Alumni Association of which Frank A. Hamilton, DDS, Indianapolis is the first president.

**Graduate Course Approved by State Association**—A graduate course in general medicine surgery and the various specialties will be conducted at Indiana University School of Medicine, Indianapolis, June 26 July 1 with the approval of the Indiana State Medical Association. A second optional week will be available in any of the branches of medicine and surgery and the specialties, including ward walks, clinics, clinical pathologic conferences, round table conferences, assigned readings, special laboratory technic and topographic anatomy. A special feature of the course will be a meeting of the county medical society secretaries to discuss child health and maternal welfare in cooperation with the state board of health under the new plan. Symposiums will be held on diseases of the gastrointestinal tract, the thyroid, arteriosclerosis and fractures. A registration fee of \$2.50 will entitle any physician in good standing to the entire course.

**Personal**—Dr. Oscar D. Ludwig has been appointed health officer of Marion County, to fill the unexpired term of the late Dr. Frederick W. Mayer, Indianapolis.—Dr. James E. Gudgel celebrated his completion of fifty years in the practice of medicine in Cynthiana at a reception, April 2, attended by 303 guests.—Dr. Edward T. Thompson has resigned as administrator of the Indiana University School of Medicine and Hospitals Indianapolis effective May 1, after six years' service. He has been succeeded by Mr. J. B. Howe Martin purchasing agent and bursar of the Indianapolis Medical Center in a consolidation of both positions it was reported.—William B. Hice Terre Haute was elected president of the Indiana Tuberculosis Association at its annual meeting April 27.—Dr. John H. Gilpin Fort Wayne has been appointed commandant of the Indiana State Soldiers Home, Lafayette, succeeding Col. Charles F. Zillmer effective May 1.

#### KANSAS

**State Medical Election**—Dr. James D. Colt Sr. Manhattan is now president of the Kansas Medical Society. Dr. William T. Bowen, Topeka was chosen president-elect at the recent annual session and Dr. John F. Hassig Kansas City reelected secretary. The next annual meeting will be held at Wichita, May 9-11, 1934.

#### LOUISIANA

**Personal**—Dr. Isidore Cohn has been made head of the department of surgery of the Graduate School of Medicine of Tulane University succeeding the late Dr. Alfred C. King.—Dr. Sidney C. Barrow Shreveport, has been appointed editor of the *Tri-State Medical Journal* (Arkansas, Louisiana and Texas), to succeed Dr. Jacob M. Bodenheimer, Shreveport, resigned.

**Society News**—The Tri-Parish Medical Society (Madison, East Carroll and West Carroll) was addressed in Lake Providence, May 2, by Drs. James B. Vaughan Monroe, on diagnosis of heart disease George M. Street Vicksburg, diagnosis and treatment of malignant conditions of the breast, and Bert R. Burgoyne, Lake Providence, hypertension. Morris A. Stewart, Ph.D., Houston, Texas addressed the Seventh District Medical Society recently on 'Fly Larvae Therapy in Treating Bone Wound Infections'.—A symposium on syphilis was presented before the Orleans Parish Medical Society, May 22 by Drs. John Signorelli, Henry W. E. Walther, Oscar W. Bethea and Frederick L. Fenno.

#### MASSACHUSETTS

**Society Observes Anniversary**—The Massachusetts Society for Mental Hygiene marked the twentieth anniversary of its founding May 10, with an observance of the twenty-fifth year of the mental hygiene movement. At this meeting Mr. Clifford W. Beers, author of "A Mind That Found Itself" and founder of the mental hygiene movement, was made an honorary member of the society. Speakers included Drs. Ira S. Wile New York, on "Fact and Fancy in Mental Hygiene" Charles Macfie Campbell, Boston, "Work of the Massachusetts Society for Mental Hygiene" and James V. May, commissioner, state department of mental diseases. Herbert C. Parsons, president of the society, was chairman.

#### MICHIGAN

**Tuberculosis Campaign**—The Wayne County Medical Society, the Detroit Tuberculosis Sanatorium and the city department of health cooperated during May in a campaign to prevent tuberculosis in Detroit. A series of clinical conferences at the sanatorium was held in connection with the campaign.

**Resolution on Medical Practice**—The council of the Wayne County Medical Society adopted a resolution May 5 making it mandatory for members or groups of members of the society who are embarking on any plan that deviates from the usually accepted methods of conducting medical practice to submit that plan to the ethics committee before launching it. This action is based solely on an effort at fairness to every practicing physician and on an earnest solicitude for the public welfare the society's bulletin states.

**Microscopes Stolen**—In the same mail the Association received letters from doctors in Niles and Jackson, Michigan, reporting that their microscopes had been stolen from their offices. The numbers of the stolen microscopes were 191862 and 149513, respectively. *THE JOURNAL* Dec. 10, 1932, page 2042, published a general news item to the effect that microscopes were being systematically stolen from physicians' offices in Detroit and surrounding towns. The thieves in these cases apparently gained entrance to the offices through the use of master keys.

**State Board Appointments**—Dr. J. Earl McIntyre Lansing, is now secretary of the Michigan State Board of Registration, succeeding Dr. Nelson McLaughlin, Detroit. Appointments to the board include Dr. Harold L. Morris Detroit replacing Dr. McLaughlin, Dr. Eugene S. Thornton Muskegon replacing Dr. Charles A. Teifer Muskegon, and Dr. John E. Handy, Caro succeeding Dr. William F. English Saginaw. Dr. Theron G. Yeomans, St. Joseph, was reappointed. Offices of the state board have been transferred from the Macabee Building, Detroit, to the Hollister Building Lansing.

**Dinner to Dr. Novy**—The completion by Dr. Frederick G. Novy of forty-seven years on the faculty of the University of Michigan Medical School Ann Arbor, was observed by the Genesee County Medical Society at a dinner, May 10. In 1886, Dr. Novy made his first connection with the institution as assistant in organic chemistry. From 1887 to 1891 he was instructor in hygienic and physiologic chemistry, assistant professor 1891-1893, and junior professor, 1893-1902. Dr. Novy is now professor of bacteriology, a position held since 1902 and director of the Hygienic Laboratory at the University of Michigan.

## MISSISSIPPI

**Personal**—Dr Gettis T Sheffield has been appointed chief medical officer of the Veterans' Administration in Jackson.

## MISSOURI

**State Medical Election**—Dr Warren L Allee, Eldon, was installed as president of the Missouri State Medical Association at its annual meeting, May 3, and Dr Caius T Ryland, Lexington, was named president-elect. Vice presidents elected at this time were Drs James F Owens, St Joseph, Hugh James Wise, Sparta, and Perry W Jennings, Canton. Dr Edward J Goodwin, St Louis, was reelected secretary. Mr E H Bartelsmeyer was appointed assistant secretary, a newly created position. He was formerly executive secretary of the St. Louis Medical Society. The next annual session will be held at St. Joseph, the time to be decided later.

**State Board of Health Abolished**—The State Department of Health of Missouri has been created to supplant the old state board of health, through the enactment of recent legislation. The position of secretary of the board has been abolished and provisions have been made for the appointment of a commissioner of health, to whom have been transferred all rights, powers and duties heretofore conferred on the secretary. Under the new law, the governor has appointed Dr Elmer T McGaugh, Jefferson City, to serve as state health commissioner for a term of four years, succeeding Dr James Stewart, who also acted as secretary. Personnel of the new department includes the following physicians:

Emmett P North, president, St. Louis, term expires May 1 1937  
 Peter T Bohan, vice president, Kansas City, term expires May 1 1937  
 William T Elam, St. Joseph, term expires May 1 1937  
 William A. Clark, Jefferson City, term expires July 1 1933  
 Herman S Gove, Lynn, term expires July 1 1933  
 Edward S Smith, Kirksville, term expires July 1 1933

Retiring members are Drs Stewart, Francis M McCallum, Kansas City, and Horace W Carle, St. Joseph.

## NEBRASKA

**Society News**—Drs Frank M Conlin and J Frederick Langdon, Omaha, addressed the Omaha-Douglas County Medical Society, Omaha, May 9, on "Carcinoma of the Small Intestine" and "Treatment of Recurrent Hernia," respectively.

**Personal**—Dr John Buis, Pender, was guest of honor at a banquet given by the chamber of commerce, March 20, marking his twenty-fifth anniversary in the practice of medicine. —Dr Alfred Schalek has recently been elected president of the Omaha Dermatological Society.

**State Medical Election**—Dr Adolph Sachs, Omaha, was installed as president of the Nebraska State Medical Association at its annual meeting, May 25, and Dr Joseph Bixby, Geneva, was named president-elect. Dr Roy B Adams, Lincoln, is the secretary. Lincoln was selected as the place for the next annual session in May, 1934.

## NEW HAMPSHIRE

**State Medical Election**—Dr Robert J Graves, Concord, was chosen president of the New Hampshire Medical Society at its annual session, May 17, Dr Dennis E Sullivan, Concord, was reelected secretary. Manchester was selected as the place for the next annual meeting in May, 1934.

## NEW JERSEY

**Society News**—A symposium on "Relationship Between the Medical Staff and the Board of Trustees of a Hospital" was presented before the Essex County Medical Society, Newark, May 11. Dr William D Cutter, secretary, Council on Medical Education and Hospitals, American Medical Association, presented the view of organized medicine. Howard S Cullman, president, Beekman Street Hospital, New York, that of the trustee, and Dr Frederic J Quigley, Hoboken, president-elect, New Jersey State Medical Society, that of the staff. —Drs Joseph E Roberts, Jr., and Charles R. Hutcheson addressed the Camden County Medical Society, Camden, May 2, on "X-Rays in Gastro-Intestinal Conditions" and "Roentgen Interpretation. Special Reference to the Osseous System," respectively. —Drs William H MacKinney, Philadelphia, and Clyde Wilson Collings, New York, addressed the Atlantic County Medical Society, Atlantic City, April 14, on "Suprapubic Prostatectomy, Including Preoperative and Postoperative Treatment" and "The Plight of the Prostatic," respectively. —The Cumberland County Medical Society held its April meeting at the Vineland Training School with Dr P Brooke Bland, Philadelphia, and Edgar A Doll, Ph D, Vineland, as speakers, on "Injuries of the Infant During Delivery" and "Motor Development of Birth Injured Children," respectively.

## NEW YORK

**Conference of Health Officers**—For economic and other reasons, the annual Conference of Health Officers and Public Health Nurses will be omitted this year. A smaller conference, including county commissioners of health, district state health officers and health officers of communities of 10,000 and over, will be held in Albany, June 27-28.

**Department for Treatment of Spastic Paralysis**—A department has been created at the Reconstruction Home, Ithaca, for the treatment of spastic paralysis. The majority of patients under treatment are those associated with a congenital injury to the brain. The state department of health and the Cornell University Medical School are cooperating in the work.

**University Awards Medal**—The Chancellor's Medal of the University of Buffalo was recently awarded to Dr Francis Park Lewis who has practiced in Buffalo since 1876. He is the founder of the International Association for the Prevention of Blindness and of the International Organization for the Control of Trachoma. In 1928 he received the Leslie Dana Gold Medal, awarded by the National Society for the Prevention of Blindness. The Chancellor's Medal was established under the will of Charles P Norton, to be awarded annually for distinguished service to the city of Buffalo. It was presented to Frank A Hartman, Ph D, professor of physiology at the university, in 1932, in recognition of his work on Addison's disease.

## New York City

**Appointments at Polyclinic Medical School**—Dr Russell L Cecil has been appointed professor in the department of internal medicine at New York Polyclinic Medical School and Hospital, and Dr Joseph E. J King, clinical professor in the department of neurosurgery. Dr Foster Kennedy has been appointed consulting neurologist.

**Society News**—The Medical Society of the County of Queens was addressed May 23, by Drs Frederick W Rice and Henricus J Stander on "Injuries to the Birth Canal and Their Prevention" and "Toxemias of Pregnancy," respectively. —At the May 3 meeting of the Harlem Medical Association Dr Joseph S Diamond was elected president and Dr Louis Neuwelt secretary.

**Dr Landsteiner Receives Medal**—Dr Karl Landsteiner since 1922 member of the Rockefeller Institute for Medical Research, was awarded the gold medal of the Dutch Red Cross Society under the presidency of Prince Hendrik, April 19. The medal was awarded for Dr Landsteiner's discovery of the blood groups in relation to blood transfusion. Dr Landsteiner was awarded the Nobel Prize in 1930 for his work on human blood groups.

**Lectures by Foreign Physicians**—Dr Arthur Frederick Hurst, senior physician, Guy's Hospital, London gave a lecture at the New York Academy of Medicine May 17, on "Some Disorders of the Esophagus." Dr Hurst discussed "Achlorhydria, Anemia and Degeneration of the Spinal Cord," May 15 at Mount Sinai Hospital. Dr Otto Loewi, professor of pharmacology, Medical Faculty, Karl-Franzens Universität Graz, Austria, lectured, May 19, at the hospital on "General Principles of Regulation and Adaptation in the Organism."

## NORTH DAKOTA

**Health Officers Elect**—At the annual meeting of the official organization for North Dakota health officers at Fargo, recently, Dr Burton K. Kilbourne, Fargo, was made president, Dr Ernst G Sasse, Lidgerwood, vice president, and Dr Arthur A Whittemore, Bismarck, secretary.

**Personal**—Dr and Mrs Frederick B Strauss celebrated their silver wedding anniversary at their home in Bismarck, recently. —At the annual meeting of the Richland County Medical Society at Wahpeton Dr Tobias L. Birnberg, St. Paul, spoke on "Skin Conditions of Babies."

## PENNSYLVANIA

**Personal**—Dr Walter R. Krauss, Wernersville, has been elected superintendent of the Pennhurst State School for Epileptics and Feebleminded Children, Pennhurst near Spring City. He succeeds Dr Albert H Super who resigned on account of ill health. The appointment was effective June 1.

**Health Association Elects Officers**—Dr Charles B Crittenden, director, Kirby Memorial Health Center, Wilkes Barre, was elected president of the Pennsylvania Public Health Association, May 17. Other officers include Drs James R Smith, Erie, and John H Doane, Mansfield, vice presidents,

and A J Bohl, Harrisburg secretary Philadelphia was selected for the place of the 1934 meeting

### Philadelphia

**Activities Concerning Economic Questions**—Pursuant to recommendations made by its committee on medical economics (THE JOURNAL February 4, page 347), the Philadelphia County Medical Society has been active in bringing about changes in certain phases of medical practice in Philadelphia according to a recent report. Admission to free dispensaries has been regulated and cooperation with the board of health has been effected. Contract practice in Philadelphia hospitals has been stopped. The Philadelphia Health Council and Tuberculosis Committee has stopped its industrial practice. An agreement has been reached with insurance carriers relative to workmen's compensation laws, the working of which were especially condemned in the early report.

**Pediatricians Honored**—The Philadelphia Pediatric Society at a special meeting, May 18 presented medals of honor to Drs Samuel McClintock Hamill founder of the society, and Howard Childs Carpenter professor of pediatrics in the University of Pennsylvania Graduate School of Medicine. Dr Hamill made an address on "Recent Trends in Child Health" and Dr Carpenter on "The Preservation of Child Health." Honorary memberships in the society were conferred on both physicians and also on Drs Philip Van Ingen New York, and Kenneth D Blackfan, Boston. Dr B Franklin Royer presented the medal to Dr Hamill and Dr Ralph M Tyson that to Dr Carpenter. Dr Hamill for many years a member of the teaching staff of the University of Pennsylvania School of Medicine, is chief of the pediatric department in Howard, Presbyterian and Philadelphia Polyclinic hospitals. He served as chairman of the medical section of the White House Conference on Child Health and Protection in 1930 and is at present president of the American Child Health Association and chairman of the state emergency child health committee. He is a former president of the American Pediatric Society, American Academy of Pediatrics and American Association for the Study and Prevention of Infant Mortality. Dr Carpenter was professor of pediatric hygiene in the graduate school and associate professor of pediatrics in the school of medicine of the University of Pennsylvania before he was appointed to his present professorship. He has been director of the department for the prevention of disease at the Children's Hospital of Philadelphia since 1913 medical director of the hospital since 1930 and pediatrician in charge of the children's department of the Graduate Hospital since 1926. Dr Carpenter was secretary and treasurer of the American Pediatric Society from 1916 to 1931 and president 1931-1932 and was president of the Children's Hospital Association of America 1928-1930. He is now president of the Children's Bureau of Philadelphia.

### SOUTH DAKOTA

**Board Moves to Pierre**—The transfer of offices of the South Dakota State Board of Health from Waubay to Pierre was to have begun, May 15, according to a recent announcement. Space has been provided in an annex recently constructed at the capitol.

**State Medical Election**—Dr Edward W Jones, Mitchell was inducted into office as president of the South Dakota State Medical Association at the annual meeting, May 17, and Dr William G Magee Watertown was named president-elect. Dr Albert S Rider, Flandreau was elected vice president, and Dr John F D Cook, Langford, reelected secretary. The next annual session will be held at Mitchell, the date to be decided later.

### TEXAS

**State Medical Election**—Dr Alonzo A Ross Lockhart, was installed as president of the State Medical Association of Texas at its annual meeting May 11, and Dr Samuel E Thompson, Kerrville, named president-elect. New vice presidents include Drs Robert H McLeod, Palestine Benjamin C Smith Hillsboro and Neil D Buie Marlin. Dr Holman Taylor, Fort Worth was reelected secretary. The next annual session will be held at San Antonio, May 7-10, 1934.

**Personal**—Drs John S McCelvey Temple, and Samuel A Woodward, Fort Worth have been appointed to the state board of health, it is reported.—Dr John R Mahone, Austin, was recently named health officer of Cameron County to succeed Dr William E Spivey San Benito.—Dr William G Gill San Antonio recently received a medal for conspicuous military service during the World War.

### WISCONSIN

**Society News**—At the annual meeting of the Ninth Council District Medical Society, Stevens Point, April 27, Dr Edwin G Bannick, Rochester, Minn, conducted a clinic on cardiorenal diseases. Following the annual dinner, Dr Herbert P Benn Stevens Point, discussed spontaneous pneumothorax and Dr Bannick, the sedimentation rate of the blood and the treatment of acute burns.

**Instruction in Maternal and Child Welfare**—Institutes on maternal and child welfare were conducted in twelve communities of Marathon County, with local health agencies and the state board of health cooperating. An average of twenty women at each institute was recorded. Subjects discussed included maternal and infant mortality, pregnancy and prenatal care, bandaging for varicose veins, care of the teeth in pregnancy, wardrobe for the expectant mother, labor delivery and postnatal care, importance of physical examinations, preparation of artificial feeding, and the preschool child. Demonstrations of technique also formed a part of the program. Speakers were local physicians and dentists, the county home demonstration agent the county nurse, and a staff physician of the state board of health.

### GENERAL

**Reregistration Under the Harrison Narcotic Act**—Physicians registered under the Harrison Narcotic Act must reregister on or before July 1. Each such physician must register with the collector of internal revenue of each district in which he maintains an office or a place for the treatment of patients. Failure to register within the time allowed by law makes a physician liable to a fine or to imprisonment, or to both and compels him to pay a penalty of 25 per cent on his annual tax when he does register.

**Warning Against Impostor**—A physician of Harrisburg, Pa, writes that an impostor came to the office to have his eyes examined, saying he was "Lieut Com L C Condon," a naval medical officer, in Pennsylvania on government business. A refraction was made and a prescription for glasses was given to the man. This he took to an optical firm, where he paid in advance for his glasses with a check made out for \$25, which was \$9 more than the bill. He then disappeared not returning for the glasses. The check was returned marked "no funds." The impostor was 5 feet, 6 or 7 inches tall, weighed about 180 pounds and had dark brown hair, blue eyes and a rather red face.

**Dr Fairchild Given Public Welfare Medal**—David G Fairchild D Sc, Washington D C, has been awarded the Public Welfare Medal by the committee on the Marcellus Hartley Fund of the National Academy of Sciences. The medal, which is given for "eminence in the application of science to the public welfare," will be presented to Dr Fairchild at the next annual meeting of the academy in recognition of "his accomplishments in the development and promotion of agricultural exploration and the introduction of new and valuable plants into the United States." From 1906 until 1928 Dr Fairchild was in charge of the office of foreign plant introduction, bureau of plant industry, U S Department of Agriculture. Since 1928 he has been pursuing special studies for the department.

**Goter Prize Awarded**—Miss Anne Heyman was awarded the first prize of \$300 for her paper on "The Bacteriology of Goter" by the American Association for the Study of Goter at its annual meeting in Memphis, May 15-17, according to Science. The prize is awarded annually for the best paper based on original research on any phase of goter. Miss Heyman's investigation was carried out in the Hygienic Laboratory at the University of Michigan under the supervision of Malcolm H Soule. Officers elected at the meeting include Dr Allen Graham, Cleveland, as president-elect, and Dr Thomas M Joyce Portland, Ore, vice president. Dr Robert M Howard, Oklahoma City, was installed as president, succeeding Dr Henry S Plummer, Rochester, Minn. The next annual convention will be held in Cleveland.

**Medical Library Meeting**—The annual meeting of the Medical Library Association will be held at Northwestern University Medical Library, June 19-21. Dr Walter R Steiner Hartford, Conn, will give the presidential address on "The Book and the Man, or Beaumont and His Physiology of Digestion." Other speakers will include Drs Isaac A Abt and Archibald Church, Chicago, Major Edgar Erskine Hume, librarian of the Army Medical Library, Washington D C, Plan of the Fourth Series of the Index Catalogue of the Army Medical Library, Dr Otto F Kampmeier, "Union Catalogue of Medical Libraries of Chicago as Sponsored by the Institute of Medicine of Chicago", Dr Eben J Carey,

"Medical Exhibits at A Century of Progress" Dr Morris Fishbein, Editor, *THE JOURNAL*, Chicago, will give an illustrated address at the annual banquet, June 19, on "Medical and Dental Bookplates." Round table conferences will also form a part of the program.

**Anniversary of Movement for Prevention of Blindness**—The National Society for the Prevention of Blindness observed the twenty-fifth anniversary of the organized movement to save eyesight, May 24, with "open house" at its offices. The national society is the outgrowth of the New York State Committee for the Prevention of Blindness, which was organized by Miss Louisa Lee Schuyler in June, 1908, the Russell Sage Foundation giving a subsidy of \$5,000. In the beginning, this committee campaigned solely against ophthalmia neonatorum. Five years after the organized movement had been established, sight saving classes were inaugurated in Boston and Cleveland. The consolidation of the New York committee with the American Society for the Conservation of Vision resulted in the formation in 1915, of the National Committee for the Prevention of Blindness, which, in 1927, changed its name to the National Society for the Prevention of Blindness. Objectives of the organization are to ascertain causes of blindness or impaired vision, to advocate measures leading to the elimination of such causes, to bring the knowledge of eye hygiene in popular form to children and adults, and to act as a clearing house and stimulating agent for others engaged directly or indirectly in the prevention of blindness. The society's report for 1932 shows that the proportion of children who are blind from ophthalmia neonatorum, among new admissions to schools for the blind fell to 7 per cent, a decrease of 0.5 per cent since the preceding year. In the interests of economy, the society conducted only seventy-eight demonstrations in twenty-one cities, as compared with 103 demonstrations in forty-two cities during 1931. Through the society's publicity on the need for early treatment for the cross-eyed child, clinics were established for cross-eyed children in New York, Philadelphia and Cincinnati. A sight conservation program was inaugurated in Hawaii and the first sight-saving class on the island will soon open in Waikiki. The establishment of fifteen new sight-saving classes in 1932 brings the total in the United States to 413 in 121 cities. In addition to the publicity carried on in various publications, representatives visited seventy-one cities in twenty-seven states and Hawaii, as well as Austria, Switzerland, Czechoslovakia, France, Germany and England. Exhibits were lent to eighty-six communities during the year. The total disbursements for the general budget amounted to \$125,993.61, while the total income from general funds was \$106,386.53. The deficit of \$19,607.08 was met by drawing on the reserves, accumulated principally from legacies and memorial and special gifts. Lewis H. Carris is the managing director.

### FOREIGN

**Pediatric Congress**—The third International Pediatric Congress will be held in London, July 20-22. Subjects of discussion will be "The Nature of Allergy and Its Role in Diseases of Children" and "The Prophylaxis of Milk-Borne Diseases." Dr Leonard Findlay, 61 Harley Street, London, W. 1, is secretary of the congress.

**Personal**—Dr Robert H. H. Goheen, an American physician in India, has recently been awarded the Kaiser-i-Hind gold medal by the king of England for meritorious services to the Indian people, the University of Chicago *Magazine* reports. Born in Kolhapur, Western India, Dr Goheen graduated from Rush Medical College in 1905, he is stationed at Vengurla, where he is in charge of St. Luke's Hospital, Hill-side Sanatorium, a leprosarium and the dispensaries, and is treasurer of the Western India Mission, the report stated.

**Hastings Prize**—Competition for the Sir Charles Hastings Clinical Prize, consisting of a certificate and a money award of fifty guineas, will close, December 31. This prize was established by the council of the British Medical Association for the promotion of systematic observation, research and record in general practice. The work submitted must include personal observations and experiences collected by the candidate in general practice. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W. C. 1, not later than December 31, and the prize will be awarded at the annual meeting in July, 1934. Inquiries should be addressed to the medical secretary of the association.

**Eastman Dental Clinic Dedicated in Rome**—Ceremonies dedicating the George Eastman Dental Clinic in Rome, a gift to the Italian government from the late Mr. Eastman of Rochester, N. Y. were held, April 21. Harvey J. Burkhart, D.D.S., director of the Rochester Dental Dispensary, founded by

Mr. Eastman, formally presented the building to the government and Dr. Amedeo Perna, director of the new institution, accepted it. A bust of Mr. Eastman, presented to the clinic by Italian citizens of Rochester, was unveiled by Mrs. Burkhart following an address by Dr. Joseph Carlucci, Rochester. Hon. John W. Garrett, ambassador from the United States to Italy, read a cable of congratulation from President Roosevelt. Premier Mussolini inspected the building during the day. The Rome clinic is the second of five dental clinics in European cities for which Mr. Eastman set aside gifts of \$1,000,000 each. The first was opened in London two years ago. The cornerstone for the third, in Stockholm, was laid, April 29, at ceremonies in which the crown prince and princess of Sweden and Dr. and Mrs. Burkhart participated. It is expected that this clinic will be finished by September, 1934, and that the cornerstones for similar buildings in Paris and Brussels will be laid this autumn.

### CORRECTION

**The Color of the Nasal Septum**—The reference in *THE JOURNAL*, April 29, at the bottom of page 1324 in the article on "The Color of the Nasal Septum" should have read: Fineberg, M. Laryngoscope, September, 1932. Furthermore, Dr. Fineberg used the carbon dioxide combining power in determining the acid base balance in a similar group of individuals instead of using the  $pH$  of the blood, as was stated by Bernheimer and Cohn.

## Government Services

### New Home of Public Health Service

Without formal dedication, the U. S. Public Health Service recently began moving into its new permanent building, at Twentieth Street and Constitution Avenue, Washington, D. C. The first official use of the building was in connection with the annual meeting of the National Advisory Health Council, May 16. Exclusive of the cost of the site, \$908,000 was expended for the construction of the marble building, which is



three stories high, with a wing at each end. There is also a wing in the middle of the building, with a combination auditorium and conference room on the first floor. An auditorium will be available on the first floor for conferences, lectures and displays of health exhibits, and a complete public health library will be installed on the second floor.

### Celebration Postponed

The proposed celebration of the fortieth anniversary of the establishment of the Army Medical School, announced in the *Military Surgeon*, has been postponed. It is anticipated that the commemoration will take place during the fall.

### Navy Officers Transferred to Reformation Camps

The transfer of 169 officers of the navy medical corps, junior grade, to the civilian conservation corps of the reformation camps was authorized, May 15, by President Roosevelt. These navy officers were on temporary assignment to the Veterans' Administration and were about to be dismissed because of economy measures with reference to medical and hospital treatment of nonmilitary service disabilities for ex-service men. The transfer was authorized rather than permit the officers to lose their positions in the government service. They will maintain their present naval status in regard to salary and will be eligible to restoration to their former assignments in the navy service. They will report for duty to the secretary of war and will be assigned to reformation camps where permanent medical officers will be needed. While the appointment of such a large number of medical officers will preclude the appointment of many physicians from civilian life to the camps, officials of the war department believe there will still be a great deal of work for civilian physicians on a part time basis.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 20 1933

#### The Medical Curriculum

An important discussion has been aroused in Edinburgh by the publication of an article entitled 'Away with the Lumber of the Medical Curriculum,' by Dr Chalmers Watson senior physician to the Royal Infirmary. He regards the medical curriculum as overloaded in some respects and deficient in other respects, particularly in clinical training and in such subjects as dietetics, antenatal hygiene, physiotherapeutics and eugenics. He brings forward a number of proposals for reform.

- 1 No course of systematic lectures should exceed fifty, each subject being represented by a textbook adapted to the student's needs, some tutorial work and demonstrations should be added. These should be so planned as to cultivate the individual student's thinking powers.
- 2 In determining the number of systematic lectures for special subjects, the sole consideration should be the needs of the student. In regard to public health, for instance, it should be remembered that a public health appointment necessitates a special qualification, obtained after graduation.
- 3 The time for practical medicine must be at least trebled, while the time devoted to practical surgery and operations should be diminished, except in relation to outpatient work.
- 4 Facilities for clinical observation and instruction should be available at an earlier part of the curriculum than at present. These should begin not later than the second year.
- 5 Outpatient work in "dispensary" practice should be reestablished and organized as an integral part of the student's work.
- 6 Reorganization of all the basal scientific subjects is called for. Less detail and more applied instruction should be given.
- 7 In the third year the present "combined" class of medicine, surgery and pathology should be replaced by the former complete entity "The Principles and Practice of Medicine." This year's study is now a travesty of the word education, there is no surgery in the practice of medicine and, for all practical purposes, no morbid anatomy or pathology in a large part of the work of the practitioner.
- 8 The present class of "anatomy and physiology in relation to clinical medicine" should be abolished, as being largely a waste of time of both student and teacher. The lectures in "clinical medicine" should be reorganized and so as to secure cooperation of the teachers in special subjects, e.g., public health.
- 9 The time of senior medical students should not be unduly taken up by special classes for the final examination on subjects of very restricted practical importance for the student's future needs.
- 10 The time saved by sacrifice of unnecessary details should be devoted to subjects of the highest importance, e.g., dietetics, antenatal hygiene, eugenics. Finally, Dr Watson sums up the defects of the present curriculum as the prevalence of the cramming system, excessive teaching of specialized detail, and inadequate teaching in the principles and practice of preventive medicine.

In the *Scotsman* Dr William Robertson formerly health officer for Edinburgh, says that, while he agrees with a great deal in the scheme, it embraces too many reforms. The present-day student is better educated than his predecessors of thirty or forty years ago, but he is not a better healer. The all-round general practitioner, who used to be so highly esteemed, has almost disappeared. Wherever there is mass production, a certain amount of scamping must take place. There are too many students and too big classes. In the discussion, Edinburgh physicians generally agreed that the curriculum is overloaded. Botany and zoology ought to be linked together and taught as one subject viz., biology in relation to medicine. Physiology ought not to be taught so much as a pure science

but more in relation to man. The student wastes much time in getting up abstruse operations he will never be called on to do. Most of the criticisms are in agreement with Dr Watson and only emphasize his points.

#### Whooping Cough in Old Age

At the Royal Society of Medicine, Prof A J Hall reported the case of a physician who had whooping cough when over 70, after forty years' work which included treating many cases of the disease. So violent was his coughing that he ruptured an abdominal muscle. The condition became distressing, after the abdomen had been strapped fits of coughing were followed by fibrillary twitching of the abdominal muscles, which went into a condition of spasm. He slept but little and always in a chair. Professor Hall pointed out the importance of recognizing these adult cases because there was a widespread view that old age was exempt, with the result that the infection might unwittingly be spread. In respect of whooping cough, as of bronchopneumonia, old persons reverted to childhood. He referred to records of other cases. Elliotson described the case of an archbishop aged 75, who had whooping cough shortly before he died. Sir William Jenner had it when he was over 65. Hale-White reported a case in a woman of 81 who had no signs of bronchitis. It seemed that as the child grew older a natural immunity was developed, but this did not suffice for protection later in life. Some of the patients who suffered in old age were known to have had the disease in childhood. Their immunity had disappeared. Others had never acquired immunity.

#### The Increase of Blood Transfusion

The report of the British Red Cross Society for 1932, which has just been published, states that the calls on the blood transfusion service continue to increase with arithmetical regularity, 2,442 calls having been received for 1932, against 2,078 for 1931, 1,627 for 1930 and 1,360 for 1929. The daily average was slightly under seven, but on eighty-four occasions ten or more were received. The personnel of the London service now numbers 1,304, 308 donors served for the first time, 308 for the second, 19 for the twentieth, 2 for the fortieth and 1 for the forty-fifth time. The number of hospitals using the service increased by twenty-four, the largest accession since 1926, and the last great hospital of London, which hitherto maintained its own service, has now abolished this and taken advantage of the facilities of the society.

### PARIS

(From Our Regular Correspondent)

May 3 1933

#### Protest Against Publicity of the Wine Industry

Wine merchants in France are resorting to publicity measures that go to shameful extremes. At a recent meeting of the Academy of Medicine, one of its members presented a vignette intended to be given as a reward to children in the schools of Alsace and supplied by the Office national du vin. On one side of the card is the portrait of Pasteur, below which is an autographed line (with his signature) which reads "Wine is the most healthful of beverages." On the other side are enumerated the amounts of various foods the caloric value of which is equal to that of a liter of wine. Dr Roux, who was a pupil of Pasteur, protested against the abuse in advertising of a statement of his teacher, although it is true that he wrote these words in an article, the context of which had been suppressed. Roux said it was a disgrace to see the name of the great scientist used to propagate among children such statements. It was distressing to learn that the distribution of these cards had been recommended to the teachers by a circular wrested evidently from the minister of public instruction by the deputies of the departments in which wine growing is the chief industry. Messieurs Barrier, Vaillard, Hayem and

Marcel Labbe expressed indignation over the audacity of the wine merchants and the weakness of the minister. The academy passed these three short resolutions: 1. No instruction pertaining to diet shall be given in schools without first being submitted to the Academy of Medicine. 2. The Academy of Medicine shall use its authority to prevent in the schools any form of publicity in favor of wine. 3. The Academy of Medicine stresses the danger that lies in the use in the schools of the term "healthful beverage" as a designation for fermented beverages. These resolutions were transmitted to the minister of public instruction. It is significant that none of the political journals that publish regular reports of discussions in the Academy of Medicine published any part of the session just described, no doubt being influenced in their action by the Office national du vin. The proceedings became known to the physicians in general only through the medical journals, especially the *Sicle médical* which is known for its independent attitude in such matters.

#### Bactericidal Effect of the Urine of Tuberculous Persons

Professor Courmont of Lyons had shown previously that the blood serum of tuberculous persons often exerts a bactericidal action on tubercle bacilli in cultures. In a recent communication to the Academy of Medicine, he reported on research done in conjunction with Gardere and Pichat, to discover whether this bactericidal principle is found also in the urine of tuberculous persons. He found that in some persons the urine possesses such bactericidal power. This potency is independent of the acidity and the chemical composition of the urine. The bactericidal substance is derived probably from the serum and is eliminated by the urine. Courmont studied also the influence of gold salts (in tuberculous persons and likewise in healthy persons) on the bactericidal potency of the urine and the blood serum. He injected "Sanocrysin" into fifteen persons and examined afterward the bactericidal properties of their blood serum and of their urine. He found that in tuberculous persons and in healthy persons gold salts increased or provoked the bactericidal potency of the blood serum and the urine toward tubercle bacilli. Even after almost complete elimination of the gold salts, the enhanced bactericidal potency persists for a time. The action is less when the patient begins to recover and it disappears for other reasons in cachectic tuberculous persons and in persons gravely affected. This property constitutes, therefore, an index of frank tuberculosis and the state of resistance. It has no doubt also a certain importance in the defense of the organism of the tuberculous person.

#### Undulant Fever

Undulant fever was discussed before the Academy of Medicine by Mr. Julie, who described two well differentiated types of septicemia due to the Bruce micro-organism: (1) a benign type, lasting not more than three years, healing without sequels, and very sensitive to various therapeutic agents, and (2) a polymorphous resistant type, tending to become chronic, causing permanent infirmities and a mortality of from 6 to 8 per cent. The latter type is the result of a secondary infection. The benign type is an infection due solely to *Alcaligenes*. It is therefore necessary in undulant fever, not to use only aerobic cultures in the Martin bouillon, slightly alkalinized but to implant the blood cultures also on various aerobic and anaerobic liquid and solid mediums.

#### Examination of Drivers of Trucks

Heretofore a medical examination has been required only of drivers of public vehicles and of motor trucks. A medical examination of drivers of private cars is demanded only when the driver has caused an accident, and permission to drive a car is denied him if he is found to have any physical defect

that would imperil others. Medical examinations for drivers of motor trucks have been begun in all the large cities, the cost of such examination being paid by the applicant. But the ministerial decree neglected to establish a fee schedule, so that a medical examination costs \$1 in Paris and \$4 in Bordeaux. The result has been that many applicants come to Paris from Bordeaux for their examination. At present, twenty-five physicians are examining applicants at the prefecture of police in Paris, at the rate of from 120 to 125 applicants a day.

#### Overt Conduct of Students

Dr. Bellocq, recently appointed by the minister of public instruction as professor of surgical anatomy at the Faculté de médecine de Strasbourg, has been received by the students with shouts and groans and whistlings so disturbing that he has been compelled to retire. The dean, who intervened, was unable to appease the students, and the course has been omitted. The reason for the incident, which is supported by the physicians of Strasbourg themselves, is that the minister of public instruction has on two occasions appointed to chairs in the Faculté de médecine de Strasbourg physicians who had no previous connection with this faculty, one having come from Paris and the other from Toulouse. The minister is entirely within his rights and several professors of the Faculté de médecine de Paris came from Lille, Nancy and Montpellier. But they occupied professorships in those cities, whereas the two physicians designated for Strasbourg have been recently advanced to professorships and had been previously heads of clinics in other faculties of medicine. It was thought in Strasbourg that all chances for the students and for the heads of clinics of the local faculty to progress would be closed if the professors that the minister sent were always heads of clinics coming from other faculties of medicine. The minister of public instruction is disturbed and has been unable to reach a decision.

#### BERLIN

(From Our Regular Correspondent)

May 15, 1933

#### Cancer Mortality in Relation to Environment

In Munich, a city of 736,000 inhabitants, cancer was in 1932 far in the lead as a cause of death (1,381 deaths, as against 1,361 in 1931). Deaths from the other principal causes ran as follows: organic heart disease 880, heart failure or cardiac paralysis, 323, arteriosclerosis, 691, cerebral hemorrhage, 578, pulmonary tuberculosis 531 (1931 586). Per 10,000 inhabitants there were 188 cancer deaths. The Berlin statisticians G. Wolff and A. Jahn have established by an exhaustive inquiry that no influence of wealth or social position on the level of cancer mortality can be demonstrated. This fact that cancer is independent of environmental influences is evidence against its contagious nature.

#### Mortality from Influenza

According to reports of the federal bureau of health, the first quarter of 1933 lay in the shadow of the influenza epidemic, which increased the general mortality, while the marriage and the birth rates sank to new low levels. Per thousand inhabitants and on an annual basis, there were, in the first quarters of 1929-1933, 80, 81, 73, 71 and 67 marriages, 139, 139, 127, 116 and 111 living births, and 160, 113, 125, 111 and 132 deaths, respectively. In the large cities of Germany, the deaths from influenza of permanent residents, during the first quarter of 1933, amounted to 5,039, as compared with 6,788, 2,478 and 839 for the first quarters of 1929, 1931 and 1932, respectively. It has been the experience that the increase in the death rates from pneumonia, bronchitis, cardiac diseases, senile weakness and, to a certain extent, from tuberculosis may

be regarded as an effect of the influenza epidemic. In the main, the increase in mortality during the first quarter of 1933, except to the extent that it may be due to the fact that the average age of the population is constantly increasing, may doubtless be ascribed to unfavorable epidemiologic conditions of short duration and is not to be interpreted as evidence of a deterioration of the condition of the public health in general.

### Tuberculosis Mortality

According to the observations of the statistician in the federal bureau of health, the tuberculosis mortality of Germany for the year 1931 was slightly lower than for 1930 nevertheless, the age groups 0-10 of both sexes and the age groups 15-20 in the male sex show an increase, which in young children up to age 5 exceeds the rate of 1928. These statements are the first statistically authenticated sign of an upward trend of tuberculosis mortality in Germany. This manifestation is doubtless due to an increased liability to infection resulting from overcrowding and from the quality of nutrition under the economic depression. From the publications of the federal bureau of health it may be seen further that now also the general mortality from pulmonary tuberculosis is increasing. During the first ten weeks of 1933, the deaths numbered 6,967 as compared with 6,583 in 1932.

### Congress of Balneology, Definitions for Terms "Mineral Waters" and "Therapeutic Springs" Established

The Balneologische Gesellschaft has been holding its annual session in Baden-Baden. Among other things, precise definitions for the terms 'mineral waters' and 'therapeutic springs' were established, with a view to combating abuses.

Special interest attached to the communication of Prof. E. Hesse of Breslau to the effect that certain metals—for example, copper, iron and arsenic—in extremely small quantities, as well as small quantities of water from springs containing iron and/or arsenic, have the capacity of preventing intoxications in animals, due to thyroid extract. That would explain the favorable action of such springs on exophthalmic goiter.

Attention may be called to the discussions on technical health resort problems. Careful observation of therapeutic springs furnishes evidence that they are subject to influences from earthquakes, also climatic changes may influence them, but further observations are needed to show to what extent.

The main topic was 'The Importance of Diagnosis in Health Resort Practice'. Professor Beckmann of Stuttgart, among others, emphasized that the acid-base equilibrium of the body may be influenced not only by the food intake but also by a therapeutic bath regimen; furthermore that cold baths have a tendency to cause a shifting toward the acid side and warm baths a shifting in the alkaline direction. Beckmann regards the manifestations of the acid base equilibrium as a good criterion for the determination of the effects and therapeutic value of springs. Other papers dealt with the effects of baths and of health resorts in general on various disease conditions: diseases of metabolism, tuberculosis, asthma and the like.

The second main topic dealt with 'Climatic Science'. For instance, a study of the air currents of a health resort is important in connection with the laying out of streets and the location of buildings. Götz-Arosa brought out that the publicity literature of health resorts concerning ozone laden air, unless based on exact measurements which is not usually the case, must be treated with skepticism. Linke of Frankfurt-on-Main called attention to the apparatus constructed by Frankenburg, which makes possible a quantitative evaluation of a given climate from the standpoint of ultraviolet radiation. According to Flach, the graphic representation of climate makes it possible to study the factors that cause disease or promote health and thus to establish the dosage of climatic treatment in health resorts.

## ITALY

(From Our Regular Correspondent)

April 15, 1933

### A Course in Endocrinology

A special course dealing with the subjects of endocrinology and arthrology, under the auspices of the Istituto interuniversitario italiano, is to be held in Varese. Professor Ponticaccia will have charge of this course. Lectures will be given on the anatomic and physiologic foundations of endocrinopathy and on the pathology and clinical manifestations of the glands of internal secretion. In addition, acute articular rheumatism, other infectious forms of rheumatism, and chronic arthropathies and their treatment will be discussed.

### Treatment of Bronchopulmonary Suppurations

Professor Pieri has tried in a number of cases the intravenous injection of alcohol in the treatment of bronchopulmonary suppurative processes and reported his results to the Società medico-chirurgica di Belluno. The method was recently proposed by Landau, Fejgin and Bauer. It appears that the alcohol thus injected is taken up through the lungs by the reticulo-endothelial system and causes an attenuation of the virulence of the microorganisms and a more abundant local production of antibodies. The injections are given in the form of a 33 per cent solution of alcohol, in doses of from 10 to 20 cc, every day or on alternate days. In three grave cases the treatment appeared to have a clearly favorable effect, following a number of injections ranging from ten to seventy. The treatment was more effective, the more recent the suppurative process was. It is contraindicated in patients affected with hepatic or renal lesions.

### Protection Against Noxious Gases

The superior council of health has been studying the subject of protection against harmful gases and dusts in the industries. The council has expressed itself in favor of including such protective apparatus in the medical and surgical equipment with which industrial establishments must, by law be provided. As a result, the production and sale of gas masks and of other apparatus for individual protection will be subjected to special rules and regulations.

### Distribution of Deaths from Tuberculosis

Dr. Cramarossa of Turin made an accurate survey of the distribution of deaths from pulmonary tuberculosis occurring from 1920 to 1930 in that city, with a population of half a million. It appeared that only sixty-three of the streets, squares and roads located in the various quarters of the city were immune from infection, and that in a given street the mortality was greater, the more evidence there was of overcrowding, the worse the economic conditions of the people were, and the more laborious their everyday work was. The mortality from tuberculosis presented in the outskirts a course not essentially different from that noted in the central areas. In the outskirts, other factors predominate over overcrowding, namely, defective hygienic conditions and poor dwellings.

### Circulatory Velocity of the Blood

Dr. Bonadico, using a 50 per cent solution of calcium chloride intravenously, determined the speed of the circulation of the blood in seventy persons and reported his results to the Accademia Linceiana di Roma. Taking account of the interval of time between the injection and the rise of temperature in various parts of the body, the speaker found that, in comparison with normal persons, the circulation is retarded in cases of cardiac decompensation, the retardation running parallel with the gravity of the decompensation. A similar retardation was noted in chronic nephritis. In bronchial asthma, pulmonary emphysema and fever, the circulatory speed does not undergo any notable changes from normal.

### Address of Professor Mistal

Professor Mistal of Montana Switzerland, delivered an address before the Sicilian section of the Federazione per la lotta contro la tubercolosi on the division of pleural adhesions to aid collapse of the lung during artificial pneumothorax. In speaking of the indications for the division of adhesions, he emphasized the value of the radiologic examination the stereo-radiographic examination and thoracoscopy for the determination of the site of the adhesions. He mentioned four types of adhesions according to the classification of Maurer, and explained the progress of technic by means of which the dangers of complications can be reduced to a minimum. Concerning the results the speaker stated that, owing to the fact that, by division of the adhesions it is possible to reduce notably the failure of incomplete pneumothorax and to diminish by about one half the thoracoplastic operations the intervention should always be considered after a careful study of all the criteria that determine the indications in individual cases.

### Professor Gabbi's Death

Prof Umberto Gabbi, senator, and director of the Clinica medica of the University of Parma died suddenly from heart disease while traveling by train to Rome. He graduated at an early age and entered the Clinica medica at Florence as an assistant at first of Professor Federici and later of Pietro Grocco. At the age of 35 he was appointed extraordinarius in medical pathology, and at the age of 45 he became head professor at the University of Messina. In the terrible earthquake of 1908, members of his family lost their lives and his clinic was destroyed. He then went to Rome and entered the Scuola di Guido Baccelli; from January, 1918, he directed the Clinica di Parma. He was the author of about 200 scientific publications, most of them pertaining to tropical diseases. Monographs of Professor Gabbi on the spleen, the kidneys and the nerves are found in Cantani and Maragliano's treatise on pathology and therapy. He published a treatise on general symptomatology and another on symptomatology of the nervous system, a treatise on tropical pathology, and a work on clinical lesions. Recently, although 70 years old, he conducted a mission into the interior of the Italian colony of Eritrea.

## JAPAN

(From Our Regular Correspondent)

April 28, 1953

### Heated Discussions on the Medical Amendments

The amendments to the medical laws unexpectedly gave rise to serious dissension in both houses of the diet. Few, if any, occasions can be recalled when medical problems have been discussed so heatedly as in this session. The government had been led to believe that the amendments would pass the diet without any difficulty, but suddenly strong opposition appeared to two items in the amendments, which read as follows: Article 4. Matters necessary for inauguration, establishment, arrangement and control shall be ordained by government order. Article 6. Practitioners shall keep record cards with detailed information about the patient, which shall be kept for five years. The local government may censor these cards at any time if need be.

Article 4 does not impose restrictions on the qualifications of a person who establishes a hospital or clinic. The government intends to permit any unlicensed man to have a hospital or clinic, employing licensed practitioners if it is kept for the benefit of the public and not for profit. The government desires the formation of a health union or the like for the lower classes, while it is a great menace to private practitioners. On these points, some members of the Japan Medical Association started a movement to oppose the government and the managers of the association. The Japan Medical Association had lost control over the members, and this fact troubled

the home office greatly. The house of peers appointed a special committee of nine to discuss the measure. After a few meetings the bill passed the upper house but with the following two reservations: 1. When a layman establishes hospitals or clinics, these shall not be for profit. 2. Censorship of records is apt to cause anxiety and apprehension to practitioners and patients, and it shall be enforced only when administrative procedures inevitably require it. The censor shall be limited to licensed physicians or pharmacists.

After the bill passed the upper house, it was presented to the lower house where a special committee of eighteen began its consideration and discussion. The home office has difficulty in having any kind of bills pass the diet and the medical amendments were no exception. The majority party was planning to do nothing about them, through considerations of political policy when, on the day last but two of the session, the committee concluded to amend article 4 to read as follows: Unlicensed practitioners cannot establish hospitals or clinics, except when approved by government order. Article 6 passed with the proviso that the censorship of record cards shall be undertaken only when it is necessary for administrative purposes. The two houses, therefore, having disagreed on article 4, had to meet in joint conference on the last day but one of the session. The situation was complicated but at last an agreement was reached by amending article 4 to read that others than licensed physicians, excluding any public corporation shall obtain the sanction of the local governor (in Tokyo, the superintendent governor of metropolitan police) before establishing a hospital or clinic. The government was obliged to agree to this amendment. Imperfect as the new legislation is it sanctions the long entertained desire to amend the old medical laws. But an important problem was left unsolved through the Japan Medical Association losing control of its members. The government will not rely on the association hereafter, because of this failure. Strangely enough, amendments to the dental law passed the diet without opposition. It is said that the Japan Dentist Association was able to hold its members in line.

### Medical Meetings

As usual each year, the general meetings of almost all the medical societies were held the first week in April. The meetings were highly successful. In Fukuoka, where the Kyushu Imperial University is located, four general meetings were attended by more than 2,000 members. In Kyoto, the following meetings were held:

The Society of Internal Medicine met under the chairmanship of Professor Matsuo. The papers were limited to the subject of liver disease. Dr. Inoue gave a physiologic review on liver disease before an audience of 1,300. More than sixty papers were read.

The thirty-fourth general meeting of the Japan Surgical Society was opened by Dr. Goto, president, and sixty papers were read. Special talks were given by Dr. Kuchi on injury to the peripheral nervous system and by Professor Shioda on the diagnosis and treatment of intestinal obstruction.

The Tuberculosis Society met for three days. Professor Miyagawa, in his paper on the salt-free diet, concluded that its effect was uncertain, while Dr. Haruki reported that this treatment was quite effective. Some ninety papers were read.

The Japan Roentgenologic Society split into two parts during the present session over the election of its president. The old society was founded and developed as a branch of orthopedic surgery, while the newly organized society, for the first time had its president from among the roentgenologists. Professor Fujinuma of Keio University became the first president of the new Japan Roentgenotherapeutic Society. The chief topic at the meeting was tuberculosis of the spine, and more than sixty papers were read.

The Endocrinologic Society was addressed by Dr Mizutani on the influence of insulin, suprarenal capsule or iodine on exophthalmic goiter. Professor Matsuoka reported that the chief element in the suprarenal cortex is sulphur and that sulphur is effective in promoting the sexual function of the male.

In the Kyushu Imperial University Medical Department the following societies held meetings.

The twenty-third general meeting of the Japan Pathologic Society scheduled too many papers to be read in three and one half days and half of them were left unread. A controversial topic was the cause of tsutsugamushi disease, especially the cultivation of Rickettsia.

The Japan Hygienic Society heard a special paper on the birth rate in Japan by Professor Furuya, over eighty papers were read.

The Japan Microbiologic Society heard talks on children's dysentery. The late Dr Asakawa's scholarship was awarded to Drs Kodama, Takahashi and Kawano in recognition of their research on Manchurian fever and typhus.

### Smallpox

Since the first outbreak of smallpox this year in the southwestern province of Kagoshima, which is near Korea, the number of cases has amounted to 180, according to official reports. In Tokyo there are twelve cases among Koreans, who came over to Tokyo just before they were found to be suffering from smallpox. The authorities are quite busy in preventing its further spread. The police bureau ordered that the regular vaccination this year should be done much earlier throughout the country.

### Infants' Week

The Central Social Welfare Association is going to hold an "infants' week" in May, one day of which will be "mothers' day." A pamphlet concerning the feeding of children, and instruction for mothers, will be given to pregnant women. An infants' evening over the radio and lectures will be held in various places. A prize is offered for a design for posters to be used during the week. Medical examinations will be given to children and babies. A prize contest is to be held for the healthiest baby, and during the week consultations on children's health will be held free of charge. In this movement, many social welfare bodies will join, such as the Red Cross society, the ladies' patriotic league, the medical associations, the home office and education office, and the midwives' association.

## BELGIUM

(From Our Regular Correspondent)

May 1, 1933

### Olfactory Disorders in Relation to Cranial Trauma

At a session of the Société d'études medico chirurgicales Drs Helmoortel, Nyssen and Thienpont presented a paper based on a large number of cranial traumas, which threw light on the disorders of olfaction.

Anosmia of traumatic origin has long been considered rare. It appears, however, that such disorders are rather frequent and are important in evaluating the intensity of the traumatism suffered. The authors collected forty-three cases of cranio-cerebral traumatism and studied the sense of smell in these patients. The examinations were made at varying periods of time after the traumatism. They used the series of odoriferous substances utilized by Mr Nyssen in his researches. The first group of substances consisted of odors having no or very weak olfactory action, the second group of substances represented odors with a marked olfactory action, together with excitation of the trigeminus and the taste. In forty-three cases of traumatism the authors observed six cases of complete and enduring anosmia, two cases of complete anosmia changing to

hyposmia, seven cases of partial or variable anosmia or hyposmia, one case of simulated anosmia, and two cases of anosmia explainable by endonasal lesions existing before the accident. In twenty-three examinees there were no olfactory disorders at the time of the examination.

The disorders follow nearly always a grave traumatism. Of the nine traumatized persons presenting slight olfactory disorders, only one had suffered a fracture of the ethmoid bone. In six cases of complete anosmia, five persons had suffered a fracture (three of the ethmoid bone and two of the cranial wall). In the twenty-six olfactory cases there appears to have been no fracture of the ethmoid bone, there were, however, eleven cases of cranial fracture: four of the petrous bone, three of the cranial wall, one of the base of the cranium, one of the apex, one of the occiput and one of the frontal bone. It appears, therefore, that when anosmia is complete and permanent, fracture of the ethmoid bone is frequent.

### The Blood Sugar in Melancholia

At the eleventh Belgian Congress of Neurology, Massaut discussed among other things the changes in the vegetative nervous system in states of melancholia and anxiety. He concluded that the metabolism of nitrogen does not present, in cases of depression and anxiety, any characteristic disorders. Sometimes there is acidosis, and sometimes there is alkalosis. In a great number of patients with melancholia the basal metabolism is retarded, whereas it is more likely to be increased in anxiety. Hypercholesterolemia is the rule in melancholia and is possibly the cause of endocrine disorders, a vagotonic state or intoxication. Hyperglycemia and glycosuria have often been observed in patients with melancholia and especially in those with anxiety. In these patients there are slight modifications of the calcium and potassium indexes of the blood. The magnesium index is, however, normal. The endocrine changes are frequent, in some cases there is a parallelism between the mental and the glandular disorders. In these patients one observes a marked neurovegetative disequilibrium, sometimes vagal and sometimes sympathetictonic. The organic endocrine and neurovegetative disorders appear closely associated.

### Results of Collapse Therapy

Addressing the Société belge de tuberculose, De Winter reported the results secured over a period of six years with surgical collapse therapy. He emphasized that the persons thus operated on are all gravely affected and do not usually have the means of taking prolonged courses of treatment. Of about 150 patients to whom surgical treatment was proposed but rejected, 120 have died, twenty are cachectic, one is an invalid, while about ten patients have been lost track of, most of them probably dead. Surgical collapse should be selective, radical and progressive and should be done by a combination of the various methods available. Apicolysis has stood well several tests. De Winter holds that pleural detachment is a much more dangerous intervention than some authors declare. Professor Sebrechts operates at present on his patients under high epidural anesthesia. It appears likely that if this method can be perfected it may constitute the ideal anesthesia for the surgery of pulmonary tuberculosis. Since the results of surgical treatment depend chiefly on the previous condition of the patient, De Winter divides his patients with reference to collapse therapy into four classes: good, mediocre, bad and bad bilaterally. In a series of 181 patients operated on, the author reported 64 per cent of failures and 36 per cent of successful outcomes. The successful outcomes were distributed as follows: 58 per cent for the good cases, 54 per cent for the mediocre cases, 26 per cent for the bad cases, and 22 per cent for the bad cases bilaterally. In 154 cases of apicolysis, the author reported twenty-one postoperative deaths during the week following the intervention.

## Marriages

WILLIAM C. MEBANE, JR., Wilmington N. C., to Miss Pauline Mae Eckert at Bethlehem, Pa., April 13

WIMMER HOWARD PAINE, JR., Charlottesville, Va., to Miss Mildred Goadby Black of Lynchburg, April 22

STIRLING SHARP MCNAIR, Elkins Park, Pa., to Miss Clarissa Walton of St. Davids, April 27

HENRY AMISS HORNTHAL, Washington, D. C., to Miss Ellen Joanna Hall, May 13

DUDLEY MERRILL, New York, to Miss Katherine Park of Englewood, N. J., June 5

MILTON C. SCHELL, Chicago, to Miss Dorothy Wagner of Springfield, Ill., April 29

CARL OLIVER DIAMOND, West Allis, Wis., to Miss Ruth Sybil Heimovitz, April 25

FRANCIS CHARLES LAKE to Miss Rosemary Stange, both of Merrill, Wis., May 3

SIGMUND NEWMAN, Vienna, Va., to Miss Rita Lessner of Richmond, May 14

## Deaths

John Wesley Bell, Minneapolis, Medical College of Ohio, Cincinnati, 1876, an affiliate Fellow of the American Medical Association, member of the House of Delegates of the American Medical Association, 1919-1923, emeritus professor of medicine and at one time professor of physical diagnosis and clinical medicine, University of Minnesota Medical School, in 1886 professor of the theory and practice of medicine at the Minnesota Hospital College, past president of the Minnesota State Medical Association, Hennepin County Medical Society and the Minnesota Academy of Medicine, member of the state senate, 1891-1895, for ten years member of the Hennepin County Sanatorium Commission, visiting physician at Northwestern Hospital and consulting physician at Swedish, St. Mary's and Asbury hospitals, aged 80, died, May 16, of chronic pulmonary tuberculosis

Carbon Gillaspie ♂ Boulder, Colo., Colorado School of Medicine, Boulder, 1905, past president of the Boulder County Medical Society, associate professor of anatomy at his alma mater, member of the American Association of Anatomists, fellow of the American College of Surgeons, served during the World War, for six years member of the city council and board of education, on the staff of the Community Hospital, aged 53, died, May 5, of coronary thrombosis

Henry Dickson Bruns ♂ New Orleans, Jefferson Medical College of Philadelphia, 1881, emeritus professor of diseases of the eye New Orleans Polyclinic, member of the American Ophthalmological Society, in recognition of his nearly fifty years' service was honored recently when a bronze plaque was placed in the diagnostic room of the Eye, Ear, Nose and Throat Hospital, aged 73, died, May 19, of angina pectoris

John Perry Seward, New York, New York Homeopathic Medical College and Hospital, 1893, formerly professor of the practice of medicine, New York Medical College and Hospital for Women, on the staffs of the Laura Franklin Hospital, Metropolitan Hospital, New York Ophthalmic Hospital, Fifth Avenue Hospital and the Broad Street Hospital, aged 64, died, May 22, of arteriosclerosis and coronary disease

Herbert Dana Schenck, Brooklyn, New York Homeopathic Medical College, 1884, fellow of the American College of Surgeons on the staffs of the Carson C. Peck Memorial Hospital, Brooklyn Nursery and Infants' Hospital, Prospect Heights Hospital and Brooklyn Maternity and the Cumberland Hospital, aged 76, died, May 20

John King Winer, Chicago, Rush Medical College Chicago, 1884 assistant professor (extramural) medicine, Northwestern University Medical School, on the staff of the Passavant Memorial Hospital, aged 70, died suddenly, May 14, of arteriosclerosis, myocarditis and coronary thrombosis

Herbert Adolph Brown ♂ Cincinnati, Medical College of Ohio, Cincinnati, 1905, member of the Associated Anesthetists of the United States and Canada, served during the World War, on the staff of the Jewish Hospital, aged 50, died, May 22, of heart disease

Clarence S. Eldredge, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1891 member of the Medical Society of the State of Pennsylvania, aged 64, died, May 25, in the Hahnemann Hospital, of cerebral hemorrhage

Floyd McJunkin Allen, Washington, D. C., University of Michigan Medical School, Ann Arbor, 1918, member of the Medical Society of the District of Columbia, served during the World War, aged 38, died, May 22, of pneumonia

Sol Rosenblatt, Chicago, Reliance Medical College, Chicago, 1909, Bennett Medical College, Chicago, 1912, member of the Illinois State Medical Society, served during the World War, aged 58, died suddenly, May 22, of heart disease

Gordon M. Hume, Sherbrooke, Que., Canada, McGill University Faculty of Medicine, Montreal, 1905, fellow of the American College of Surgeons, attending surgeon to the Sherbrooke Hospital, aged 49, died, April 10

David H. Young, Fulton, Mo., Missouri Medical College, St. Louis, 1878, member of the Missouri State Medical Association, on the staff of the State Hospital, Number 1, aged 75, died, March 22, of pernicious anemia

Julian Davis Arbuckle, Lewisburg, W. Va., University College of Medicine, Richmond 1901, county health officer, aged 58, died suddenly, May 3, in Maxwellton, of coronary occlusion and angina pectoris

Oscar Noel Moody, Tennessee City, Tenn., Vanderbilt University School of Medicine Nashville, 1882, University of Nashville Medical Department, 1883, aged 71, died suddenly, April 29, of heart disease

Louis A. Thompson ♂ Veterans Administration Home, Va., Bellevue Hospital Medical College, New York, 1897, governor and manager of the Veterans Administration Home, aged 60, died, April 14

George Milton Marshall, Wheelersburg, Ohio, Columbus Medical College, 1880, Bellevue Hospital Medical College, New York 1885 member of the Ohio State Medical Association, aged 82, died, April 11

Grace Peckham Murray, New York, Woman's Medical College of the New York Infirmary for Women and Children, 1882 member of the Medical Society of the State of New York, aged 84, died, April 8

William Andrew Dittenbaugh, Chicago, Hahnemann Medical College and Hospital, Chicago 1912, aged 56, died, May 27, in a hospital at Columbia City, Ind., of peritonitis, following a colostomy

Clyde Wallace Parsons ♂ Sweet Springs, Mo., National University of Arts and Sciences Medical Department, St. Louis, 1917, served during the World War, aged 42, died, May 7, of pneumonia

Frank Conger Smith ♂ Yankton, S. D., University of the City of New York Medical Department, 1894, fellow of the American College of Surgeons, aged 64, was killed, May 4, when gored by a bull

Frederick A. Kraft, Milwaukee, American Medical College St. Louis, 1894, Barnes Medical College, St. Louis, 1899, formerly city health commissioner, aged 62, died, May 13, of valvular heart disease

Frank Edwards Coudert, Guthrie, Okla., New York University Medical College, 1891, aged 62, died, April 30, at the Masonic Home, Wallingford, Conn., of arteriosclerosis and cerebral hemorrhage

Clarissa M. Clay Richardson, St. Paul, John A. Creighton Medical College, Omaha, 1917, aged 37, died, April 16, in St. Joseph's Hospital, of bronchopneumonia and toxemia of pregnancy

Emmett Eugene Pollard, Graysville, Tenn., University of Alabama School of Medicine, 1916, served during the World War, aged 39, died, April 20, in Laverne, Ala., of chronic nephritis

Carolyn Stephen Cronin, San Francisco, St. Louis University School of Medicine 1922, aged 37, died, April 1, in the Letterman General Hospital, of atrophic cirrhosis of the liver

Joseph Bowditch Gerould, North Attleboro, Mass., Harvard University Medical School, Boston, 1881, member of the Massachusetts Medical Society, aged 77, died, March 28

Peter Stocksclaeder, Rochester, N. Y., University of Buffalo School of Medicine, 1881, member of the Medical Society of the State of New York, aged 76, died, March 23

**John Collier McRae**, Atlanta, Ga., Emory University School of Medicine Atlanta 1918 served during the World War, aged 36, was found dead, May 6, of heart disease.

**Loren Everett Wilson**, Los Angeles, College of Physicians and Surgeons, Los Angeles 1912 served during the World War, aged 48, died, April 16, of diabetes mellitus

**Ernest B Loudin**, Olympia, Wash., Barnes Medical College, St. Louis, 1900, member of the Washington State Medical Association, aged 62, died May 24, of heart disease

**Frank Horace Wray**, Omaha, College of Physicians and Surgeons Keokuk, Iowa, 1887 aged 83 died May 2, in Long Beach, Calif., of carcinoma of the liver and gallbladder

**Roger Irving Clapp**, Inglewood Calif., Tufts College Medical School, Boston, 1914, aged 49, died, April 2, of hypertension, cerebral hemorrhage and bronchopneumonia

**Fernando Hardinger Wade**, Columbia Mo., University of Missouri School of Medicine, Columbia, 1893 aged 68, died, April 27, of cerebral hemorrhage and arteriosclerosis

**James Magner McElroy**, Los Angeles, Bennett Medical College, Chicago, 1913 member of the Illinois State Medical Society, aged 49, died, May 1, of heart disease

**Ernest Morrison Currie**, Detroit, Michigan College of Medicine and Surgery, Detroit, 1902 aged 56 died, May 16, of chronic myocarditis and coronary thrombosis

**Ervin A Mader**, Chicago, Loyola University School of Medicine, Chicago, 1922, aged 39, died, May 26 in the Edward Hines, Jr., Hospital, Hines, Ill., of tuberculosis

**Oscar William Sherwood**, Westport Calif., College of Physicians and Surgeons of Chicago 1885 aged 70, died, May 14, in Fort Bragg of cardiorenal disease

**Michael Joseph Banks**, Jacksons Gap Ala., Atlanta Medical College, 1890, member of the Medical Association of the State of Alabama, aged 75, died April 4

**Robert Henry Harper**, Afton Okla., Missouri Medical College, St. Louis, 1895 past president of the Ottawa County Medical Society, aged 64, died, February 22

**James Archibald Keown**, Los Angeles, Harvard University Medical School, Boston, 1894, aged 58, died, April 11, of injuries received in an automobile accident.

**Leon S Dalsimer**, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia, 1900, aged 53, died, May 10, of hypertension and cardiovascular disease.

**Charles Edwin Tegtmeyer**, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia, 1892, aged 65 died May 12, of carcinoma of the lungs

**William Thomas Slemmons**, Santa Monica, Calif., Rush Medical College Chicago, 1884, aged 79, died, May 4, of chronic myocarditis and arteriosclerosis

**Amy J A G Rees**, Costello, Pa., College of Medicine and Surgery (Physio-Medical), Chicago, 1901, aged 76, died, May 1, in Corry, of pernicious anemia.

**Henry Sidney Kergan**, Oakland Calif., Michigan College of Medicine and Surgery, Detroit, 1894, aged 62, died suddenly, May 10, of heart disease.

**Herschel A Snorf**, Greenville, Ohio, Miami Medical College, Cincinnati, 1886 aged 70, died, May 15, in the Greenville Hospital, of intestinal obstruction.

**Duffield Dufferin MacGillivray**, Pine Village Ind., University of Illinois College of Medicine, Chicago, 1906, aged 58, died, May 2, of paralysis agitans

**William Clement Butler**, Fort Ritner Ind. (licensed, Indiana, 1897), aged 78, died May 19, in Bloomington, of acute myocarditis and arteriosclerosis

**Constantine Leventis**, Detroit, National University of Athens School of Medicine, Athens, Greece, 1891, aged 64, died May 6, of heart disease.

**William Warren Conant Spencer**, Brookline, Mass., Eclectic Medical College of Maine, Lewiston, 1884, aged 78, died April 4, in Miami Fla.

**Lewis Carthrae, Jr.**, Corder, Mo., Kansas City Medical College, 1904, served during the World War, aged 60, died, March 11, of heart disease.

**Charles Mitchell**, St. Louis, St. Louis College of Physicians and Surgeons, 1906, aged 64, died, May 2 in the City Hospital, of heart disease.

**Mary J Lobdell**, Wilmington Calif., Woman's Medical College, Chicago, 1884, aged 86, died, April 1, of myocarditis and hypostatic pneumonia

**William Williams**, Herndon, Ky., Louisville (Ky.) Medical College, 1872 Civil War veteran, aged 87, died, March 31, of paralysis of the throat.

**George W Kernodle**, Washington D. C., College of Physicians and Surgeons, Baltimore, 1886, aged 72, died May 2, of pneumonia.

**Howard C Hart**, Russiaville, Ind., Eclectic Medical Institute, Cincinnati, 1904 aged 56, died, May 10, of diabetes mellitus and paralysis

**Joseph P Esch**, Daytona Beach Fla., University of Wooster Medical Department, Cleveland, 1876, aged 84, died, May 9 of pneumonia

**William E Morriss**, Fort Smith Ark., College of Physicians and Surgeons Keokuk, Iowa, 1887 aged 75, died, April 3, in a local hospital

**John W Buehler**, Prairie Du Sac Wis., Bennett College of Eclectic Medicine and Surgery, Chicago, 1886, aged 85, died April 3

**Rufus Reed**, Margate City, N. J., Hahnemann Medical College of Philadelphia, 1871, aged 92, died, April 1, of myocarditis

**Raymond A Bissey**, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia, 1902, aged 55, died March 10

**C K Campbell**, Dover, Ark. (licensed, Arkansas, 1903) aged 66, died, May 6, of myocarditis and chronic interstitial nephritis

**Edward I Haight**, Emmett, Mich., Detroit College of Medicine, 1903, aged 58 died, April 15, in Port Huron (Mich.) Hospital

**Edward Stell Haines**, Chester, Pa., Hahnemann Medical College and Hospital of Philadelphia, 1891, aged 61, died, March 3

**James A. Dodson**, Waukomis, Okla., University of Nashville (Tenn.) Medical Department, 1874, aged 87 died, February 23

**Laurence Edward Wright**, Chatsworth Calif., Harvard University Medical School, Boston, 1922, aged 35, died, April 5

**John S Jackson**, Beaver Falls Pa., Baltimore University School of Medicine, 1886, aged 80, died May 2, of arteriosclerosis

**Joseph Wilson Bartlett**, Nashville, Tenn., University of Nashville Medical Department, 1905, aged 61, died, February 25

**William Anson Powell**, Los Angeles, College of Physicians and Surgeons, Keokuk, Iowa, 1884, aged 82, died, April 6

**Herman E Boice**, Farmington Mich., Jefferson Medical College of Philadelphia 1899 aged 56, died, May 9, of heart disease.

**Jefferson D Funderburk**, Lancaster S. C., College of Physicians and Surgeons, Baltimore 1889, aged 71, died in March

**James H Wheelless Thebes III**, College of Physicians and Surgeons, Keokuk Iowa, 1881 aged 83, died, March 26

**William Thomas Courtwright**, Sedan, Kan., Medical College of Ohio, Cincinnati, 1886 aged 68 died, March 14

**Zeno Green Logan**, Tooele, Utah, University of Louisville (Ky.) School of Medicine, 1907 aged 54 died, April 8

**Charles Frederick Dietz**, Neola, Iowa, Medical Department of Omaha University, 1897, aged 68, died, April 21

**John W Daniel**, Franklin Ga., University of Louisville (Ky.) School of Medicine, 1873 aged 83, died April 18

**John N Sebastian**, Louisville, Ky., University of Louisville School of Medicine, 1899, aged 58, died March 5

**John D Jackson**, Pocatello Idaho, Starling Medical College, Columbus, Ohio, 1887, aged 76, died March 12

**Cale W Coe**, Redlands Calif., Starling Medical College Columbus Ohio, 1888 aged 71, died, February 9

**John Benjamin Owens**, Rock Hill S. C., Atlanta (Ga.) Medical College, 1892 aged 65, died March 12

**William Aaron Gibson, Jr.**, Thomson, Ga., Atlanta Medical College, 1915, aged 40, died, February 27

**Abram Hassell King**, Chestnut Mound Tenn. (licensed, Tennessee, 1889), aged 83, died, February 16

**Stephen E Smith**, Topeka, Kan., Kansas Medical College Topeka 1893 aged 65, died, March 25

**Joseph John Mahady**, Brooklyn, Baltimore Medical College, 1893 aged 65, died, February 10

**William F Gann**, Columbus Ga., Louisville (Ky.) Medical College, 1888, aged 80, died March 24

## Bureau of Investigation

### MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States  
Department of Agriculture

[EDITORIAL NOTE The abstracts that follow are given in the briefest possible form (1) the name of the product, (2) the name of the manufacturer shipper or consigner, (3) the composition, (4) the type of nostrum (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product]

**Osmo Kaolin**—Gabriel J. Fajardo New York Composition Clay For inflammation swelling etc. Fraudulent therapeutic claims.—[N J 17935 June 1931]

**Gunn's Antiseptic**—Merrick Medicine Co. Waco Texas. Composition Sulphuric acid (18 per cent) small quantity of a magnesium compound traces of carbon bisulphide and volatile oils with alcohol and water (general cure-all) Fraudulent therapeutic claims.—[N J 17936 June 1931]

**U Ta Ka Indian Tonic**—National Medicine Co. Nashville Tenn. Composition Essentially epsom salt extracts of plant drugs including a laxative drug sodium benzoate glycerin sugar and water. Fraudulent therapeutic claims.—[N J 17945 June 1931]

**Alexander's Lung Healer**—Smith Kline & French Philadelphia Composition Chloroform menthol spearmint oil extracts of plant drugs alcohol sugar and water. Fraudulent therapeutic claims.—[N J 17949 June 1931]

**Mel Maroba**—Sharp and Dohme Baltimore Composition Essentially potassium iodide (18.5 grams to the fluid ounce) resins tannins reducing sugar alcohol (17.7 per cent) and water. For syphilis rheumatism etc. Fraudulent therapeutic claims.—[N J 17952 June 1931]

**Cassapine**—Leadbeater Drug Corp. Alexandria Va. Composition Essentially mineral oil with small amounts of thymol eucalyptol and the oils of camphor pine needle and cinnamon. For catarrh tuberculosis, etc. Fraudulent therapeutic claims.—[N J 17956 June 1931]

**Anti Adenitis**—Anti Adenitis Co. Hampton N. H. Composition Essentially sulphonated bitumen eucalyptol menthol a small amount of soap and water. For pneumonia etc. Fraudulent therapeutic claims.—[N J 17957 June 1931]

**Perry Davis Vegetable Painkiller**—Chas. L. Husking and Co. New York Composition Essentially camphor red pepper myrrh alcohol and water. Fraudulent therapeutic claims.—[N J 17958 June 1931]

**Lafayette's Cod Liver Oil with Malt and Hypophosphites**—Hance Bros and White Philadelphia Composition Essentially calcium potassium sodium iron manganese and phosphorus compounds, sugar alcohol and water with a small amount of cinchona alkaloids. Worthless as a source of vitamins A and D. Fraudulent therapeutic claims.—[N J 17961 June 1931]

**Rexall Grippe Pills**—United Drug Co. Boston Composition Essentially salicylic acid cinchona alkaloids red pepper and aloin. Fraudulent therapeutic claims.—[N J 17963 June 1931]

**Smith's Specific Compound**—Texatone Medicine Co. Enid Okla. Composition Essentially epsom salt with a small quantity of salicylic acid extracts of plant drugs and water. Blood purifier. Fraudulent therapeutic claims.—[N J 17971 June 1931]

**Smith's King of All Pain**—Texatone Medicine Co. Enid Okla. Composition Essentially petroleum oils and nitrobenzene. Fraudulent therapeutic claims.—[N J 17971 June 1931]

**Tex A Tine Ointment**—Texatone Medicine Co. Enid Okla. Composition Petrolatum (97.4 per cent) and minute quantities of menthol and cinchonidine. For catarrh skin troubles etc. Fraudulent therapeutic claims.—[N J 17971 June 1931]

**McCormick's Cold and Pain Salve**—McCormick and Co. Inc. Baltimore Composition Essentially petrolatum with menthol and oils of camphor pine and thyme. Fraudulent therapeutic claims.—[N J 17973 June 1931]

**Q 623**—Loevy Drug Co., Inc. Baltimore Composition Essentially sodium salicylate baking soda and water. For rheumatism etc. Fraudulent therapeutic claims.—[N J 18028 July 1931]

**Campbell's (James P.) Safe Arsenic Complexion Wafers**—McCullough Drug Co. Cincinnati Composition Starch and a small quantity of arsenic. Fraudulent therapeutic claims.—[N J 18031 July 1931]

**Clay Pine**—Clay Pine Products Co. Columbus Ohio Composition Clay tar and water. For pneumonia etc. False claims for composition and fraudulent therapeutic claims.—[N J 18040 July 1931]

**Stretch's Balsam Wild Cherry and Horehound**—Joseph D. Blauth Estate Trenton N. J. Composition Extracts of wild cherry menthol methyl salicylate chloroform alcohol sugar and water. For coughs etc. Fraudulent therapeutic claims.—[N J 18041 July 1931]

**Livingston's Regenerator**—Livingston Medicine Co. Griffin Ga. Composition Epsom salt a laxative plant drug alcohol water and flavoring. Cure-all. Fraudulent therapeutic claims.—[N J 18043 July 1931]

**Cherry's Famous Salve**—William E. Cherry Trenton N. J. Composition Essentially a lead salt of an organic acid fatty oils and camphor. Fraudulent therapeutic claims.—[N J 18044 July 1931]

**Resor Bisol**—Burrough Bros. Mfg. Co. Baltimore Composition Essentially resorcin a bismuth compound beta naphthol salicylic and gallic acids. For stomach disorders. Fraudulent therapeutic claims.—[N J 18045 July 1931]

**Neutrone 99**—The Kells Co. Inc. Newburgh N. Y. Composition Sodium salicylate (about 7 per cent) potassium iodide (0.2 per cent) a small quantity of an iron compound colchicum laxative drugs alcohol and water. For rheumatism etc. Fraudulent therapeutic claims.—[N J 18048 July 1931]

**Kinoloids**—Georgian Pharmacal Co. Atlanta Ga. Composition Quinine boric acid an iodine compound and cocoa butter. For female troubles. Fraudulent therapeutic claims.—[N J 18049 July 1931]

**Delmar's Rheumatic Remedy**—Glyza Chemical Co. Washington D. C. Composition Potassium iodide (7½ per cent) with small quantities of an arsenic compound a salicylate, other organic matter alcohol (4.2 per cent) and water. Fraudulent therapeutic claims.—[N J 18179 October 1931]

**Hall's I N T Iron and Nux Tonic**—National Health Laboratories Scotland Neck N. C. Composition Epsom salt (23.2 per cent) ferrous chloride (0.5 per cent) a small quantity of strychnine a trace of formaldehyde and water. Fraudulent therapeutic claims.—[N J 18180 October 1931]

**Leos (Samuel H. P.) Lithontripile**—S. H. P. Lee Co. Inc. New York Composition A plastic mass containing 46 per cent soap with potassium nitrate (5.3 per cent) potassium bicarbonate (10 per cent) juniper and other oils a small quantity of an iron compound and water. For kidney stone, gall-stones diabetes etc. Fraudulent therapeutic claims.—[N J 18181 October 1931]

**Gonolin**—Lipoidal Laboratories, Inc. New York Composition Iodide phosphate a magnesium compound and extracts of plant drugs. For gonorrhea. Fraudulent therapeutic claims.—[N J 18183 October 1931]

**Ac Ac**—Approved Formulas Corp. Birmingham Ala. Composition Essentially aspirin acetanilid caffeine glycerin alcohol and water. For influenza pain etc. Fraudulent therapeutic claims.—[N J 18187 October 1931]

**Trusler's Subacute Rheumatic Tablets**—Kalmus Chemical Co. Cincinnati Composition Sodium salicylate and a laxative plant drug coated with calcium carbonate and iron oxide. Fraudulent therapeutic claims.—[N J 18192 October 1931]

**Creta Methyl**—Girard Pharmacal Co. Philadelphia Composition Clay 65 per cent with petroleum oil glycerin and methyl salicylate. For rheumatism inflammation etc. Fraudulent therapeutic claims.—[N J 18196 October 1931]

**Brater's Asthma Powder**—John K. Brater New York Composition Ground stramonium leaves with potassium nitrate. Fraudulent therapeutic claims.—[N J 18197 October 1931]

**Seelye's Laxative Cold and Headache Tablets**—A. B. Seelye Medicine Co. Abilene Kans. Composition Acetanilid extracts of aloe cinchona and red pepper. Fraudulent therapeutic claims.—[N J 18200 October 1931]

**Seelye's Wasa Tusa**—A. B. Seelye Medicine Co. Abilene Kans. Composition Alcohol ammonia sassafras oil small quantities of chloroform ether and red pepper. For rheumatism etc. Fraudulent therapeutic claims.—[N J 18200 October 1931]

**Vitalox**—Chemicals and Drugs Inc. Baltimore Composition Caffeine salicylic and benzoic acids licorice wild cherry a laxative drug strychnine valeric acid volatile oils alcohol and water. Adulterated and misbranded. Falsely represented as containing vitamin D.—[N J 18203 October 1931]

**Abell's Formalde Balm**—Home Remedy Co. South Haven Mich. Composition Essentially petrolatum with 1 per cent of volatile oils including eucalyptus and menthol. No formaldehyde present. For influenza hay fever etc. Fraudulent therapeutic claims.—[N J 18206 October 1931]

**Astyptodyne Healing Oil**—Astyptodyne Chemical Co. Wilmington N. C. Composition Essentially pine oil. For rheumatism etc. Not antiseptic or germicidal as claimed. Fraudulent therapeutic claims.—[N J 18209 October 1931]

**Brames Vapomentha Salve**—R. M. Brame and Sons North Wilkesboro N. C. Composition Camphor menthol and eucalyptol in petrolatum. For pneumonia croup hay fever etc. Fraudulent therapeutic claims.—[N J 18211 October 1931]

**Insurol**—Deutsche Vital Gesellschaft Berlin Germany Composition Tablets containing yeast glandular tissue lecithin and lithium salicylate. For diabetes. Fraudulent therapeutic claims.—[N J 18212 October 1931]

**Aromanna**—Holdstein Drug Co. Paulsboro N. J. Composition Aloe licorice, baking soda an antimony compound a small quantity of salicylic acid with anise oil menthol sugar alcohol and water. Cure all. Fraudulent therapeutic claims.—[N J 18213 October 1931]

**Bull's Sarsaparilla Compound**—John D. Park and Sons Co. Cincinnati Composition Potassium iodide with small quantities of extracts of plant drugs sugar alcohol and water. For acrofula skin eruptions etc. Fraudulent therapeutic claims.—[N J 18218 October 1931]

**Runners Cold Breakers**—C. H. Griest Co. Wheeling W. Va. Composition Acetanilid cinchonine sulphate and camphor. False statement as to acetanilid content. Fraudulent therapeutic claims.—[N J 18223 October 1931]

**Runners Old Fashioned Sarsaparilla Compound**—C. H. Griest Co. Wheeling W. Va. Composition Podophyllum senna licorice potassium iodide (3.6 grams to fluid ounce) alcohol and water. Blood purifier. Fraudulent therapeutic claims.—[N J 18224 October 1931]

**Runners' R R R Rheumatic Remedy**—C H Griest Co Wheeling W Va. Composition Sodium salicylate (28½ grains to fluid ounce) extracts of plant drugs a trace of alcohol and water. Fraudulent therapeutic claims.—[N J 18224 October 1931]

**Urie O**—E. C MacKallor Drug Co Binghamton N Y Composition Sodium salicylate (28 grains to the teaspoonful) potassium iodide extracts of plant drugs alcohol and water. For rheumatism etc. Fraudulent therapeutic claims.—[N J 18302 January 1932]

**Ingodine Tablets**—Govett, Ltd Long Island City N Y Composition Extracts of plant drugs and iodine. For high blood pressure rheumatism etc. Fraudulent therapeutic claims.—[N J 18303 January 1932]

**Tru Ade**—Larweb Medical Co Fort Wayne Ind Composition Petrolatum lard camphor and a small quantity of menthol. Cure-all. Fraudulent therapeutic claims.—[N J 18305 January 1932]

**Rice's Salve**—Rice Chemical Co Greensboro, N C Composition Petrolatum, camphor menthol eucalyptol and turpentine. For pneumonia etc. Fraudulent therapeutic claims.—[N J 18306 January 1932]

**Novopin**—Quest and Co New York Composition Essentially a volatile oil such as pine needle oil (88 per cent) and baking soda. For nervous disorders etc. Fraudulent therapeutic claims.—[N J 18310 January 1932]

**Nox Ri Tis**—Chester G Adcox Co Troy, N Y Composition Sodium salicylate (277 grains to tablet) methenamine calcium carbonate a magnesium compound and small quantities of plant drugs and sugar. For rheumatism neuritis etc. Fraudulent therapeutic claims.—[N J 18311 January 1932]

**Kelsey Ichthyol Suppositories**—Southport Chemical Co Inc. New York Composition Essentially cocoa butter with ammonia and sulphur compounds. For piles female disorders etc. Fraudulent therapeutic claims.—[N J 18313, January 1932]

**Pierre Cartier's Medicine**—Bay State Drug Co Palmer Mass. Composition An emulsion of cod liver oil (23 per cent) alcohol (15 per cent) invert sugar (37 per cent) with water and gum. General tonic. Fraudulent therapeutic claims.—[N J 18314 January 1932]

**Huff's Old Reliable Sore Throat Remedy**—Huff Bros. and Co Pittsburgh Composition Essentially chloroform iron chloride a small quantity of extracts of plant drugs with glycerin alcohol and water. Chloroform content misstated. Fraudulent therapeutic claims.—[N J 18317 January 1932]

**Lincoln Tea**—Fort Wayne Drug Co Fort Wayne Ind Composition Cut and powdered drugs including senna couch grass star anise camomile flowers and coriander seed. Liver and kidney disorders etc. Fraudulent therapeutic claims.—[N J 18319 January 1932]

**Quinseptikons**—Tablax Co New York Composition Suppositories containing salicylic acid (0.9 per cent) boric acid (13.5 per cent) quinine hydrochloride (5.3 per cent) and theobroma oil. As a vaginal prophylactic, for local infections etc. Fraudulent therapeutic claims.—[N J 18324 January 1932]

**Gen Lax**—Mobile Drug Co Mobile Ala Composition Essentially iron (ferrie) sulphate epsom salt hydrochloric acid and nitric acid potassium acetate and water. Cure all. Fraudulent therapeutic claims.—[N J 18328 January 1932]

**Kettler's Excelsior Blood Purifier**—Composition Potassium carbonate potassium nitrate a laxative plant drug alcohol and water. Fraudulent therapeutic claims.—[N J 18332 January 1932]

**Livingston's Re Gem (Regenerator)**—Livingston Medicine Co Griffin Ga Composition Essentially epsom salt a laxative plant drug alcohol (11.8 per cent by volume) and water. Cure all. Fraudulent therapeutic claims.—[N J 18337 January 1932]

**Livingston's Golden Catarrh Balm**—Livingston Medicine Co Griffin Ga. Composition Carbolic acid camphor menthol and eucalyptol in a mixture of petrolatum and paraffin. Fraudulent therapeutic claims.—[N J 18339 January 1932]

**Baptisine**—A Renkert and Co Memphis Tenn Composition Small quantities of baking soda borax camphor menthol and alcohol in water. Not antiseptic. Fraudulent therapeutic claims.—[A J 18343 January 1932]

**Alco Pain Killer**—Alertox Inc Atlanta Ga Composition Kerosene ether, methyl salicylate and oils of mustard turpentine and camphor. Fraudulent therapeutic claims.—[N J 18344, January 1932]

**Livingston's Root and Herb Tea**—Livingston Medicine Co Griffin Ga. Composition Ground plant drugs including bearberry senna buck thorn coriander fennel mullein and guaiac. Blood purifier. Fraudulent therapeutic claims.—[N J 18348 January 1932]

**Search Warrant Liniment**—Livingston Medicine Co Griffin Ga. Composition Essentially alcohol ammonia capsicum oleoresin oil of camphor and water. Alcohol content wrongly declared. Fraudulent therapeutic claims.—[N J 18349 January 1932]

**Livingston's Special Invigorator**—Search Warrant Liniment Co Griffin Ga Composition Essentially epsom salt, with senna alcohol (15.2 per cent by volume) sugar and water. Tonic. Alcohol content wrongly declared. Fraudulent therapeutic claims.—[N J 18351 February 1932]

**Le Sieur's Syrup of Tar and Cod Liver Extract**—Nemock Specialty Co Somerville Mass Composition Chloroform tar menthol sugar alcohol and water. Fraudulent therapeutic claims.—[N J 18354 February 1932]

**Septigyn Tablets**—N and S Co Dallas Tex Composition Zinc phenolsulphonate (48.8 per cent) sodium phenolsulphonate (21.4 per cent) copper phenolsulphonate (3.3 per cent) Glaubers salt (18.7) and milk sugar. For gonorrhea etc. Fraudulent therapeutic claims.—[N J 18356 February 1932]

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

### TRICHOMONAS VAGINALIS

*To the Editor*—Do you think it is probable or possible that infection with *Trichomonas vaginalis* can be transmitted through bathing in a swimming pool in which a person known to have leukorrhea and pruritus caused by this parasite has been a frequent bather? The water of the pool has been chlorinated and an attempt is made to keep the concentration between 2 and 4 parts per million of free chlorine. The laboratory tests have consistently been negative for *Bacillus coli* in 10 cc fermentation tubes. What is the most efficacious treatment for *Trichomonas vaginitis*?

WILLIS P BAKER M D Santa Ana Calif

**ANSWER**—It is impossible for women to contract an infection due to *Trichomonas vaginalis* through bathing in a swimming pool because even ordinary tap water, untreated with chlorine or any other chemical destroys these organisms. *Trichomonas vaginalis* apparently lives in symbiosis with other organisms in the vagina and it can be grown only in certain special mediums. It seldom survives even when transplanted from the vagina of one woman to that of another.

There are many ways of treating the vaginitis associated with the *Trichomonas vaginalis*. Unfortunately whereas immediate relief can usually be accomplished in almost every instance, there are many recurrences. The treatment suggested by Greenhill (*THE JOURNAL* May 30, 1931, p 1862) is as follows:

The vagina is thoroughly scrubbed with gauze or cotton saturated with tincture of green soap (liniment of soft soap L S P). All the vaginal folds are smoothed out and every part of the mucosa is scrubbed. The scrubbing is one of the most important steps in the treatment and it is usually persisted in until slight bleeding is noted in the vaginal mucosa. Bleeding generally occurs because the mucosa in these cases is friable. The soap is washed out with tap water or with mercuric chloride and the vagina is dried thoroughly. A speculum is inserted into the vagina and hexylresorcinol is instilled into the vagina and applied all over the vaginal wall in the vault of the vagina and on the cervix. A tampon saturated with half or full strength glycerin is then inserted high up into the vaginal vault. A second, dry tampon is inserted to prevent the escape of glycerin on the patient's clothing. Hexylresorcinol is applied to the vulvar and anal regions and the patient is instructed to remove the tampons after twenty-four hours. The string of the second tampon has a knot tied in it so that the patient may know that this tampon is to be pulled out first. After removal of the tampons a douche of tincture of green soap is taken. The treatment outlined is repeated every second day for at least three times. The patient takes a green soap douche on the mornings between treatments but not on the mornings she is to receive a treatment. A douche is not taken on the morning of a treatment because it is desirable to see how much discharge there is and also because hanging drop examinations are made at that time. Treatment is continued until hanging drops on two successive visits fail to show the trichomonas. However the patient is advised to take a 0.5 per cent lactic acid douche daily for about two weeks after treatment is discontinued. The purpose of the lactic acid douche is to attempt the reestablishment of a normal bacterial flora in the vagina.

A matter of great importance but unpleasant to discuss is the cleansing of the anus after a bowel movement. To accomplish the latter most women use an upward sweep toward the vagina and urethra but this may produce reinfection if the causative organisms come from the rectum. The patients are instructed to use a sweeping motion directed away from the vagina and toward the sacrum. The significance of this method of cleansing the anal region should be impressed on the patient.

Since recurrences of the troublesome discharge occur in a certain proportion of cases and since these frequently manifest themselves immediately after a menstrual period it is advisable to reexamine patients just before and just after a menstrual period. If organisms are found, a course of treatments should again be given.

### "URODONAL"

*To the Editor*—Please let me know if you have any information on the remedy called Urodonal made by J L Chatelein of France and distributed in this country by George J Wallau Inc. I should like to know approximately what the chemical constituents are.

M D Louisiana

**ANSWER**—Urodonal is one of the patent medicine variety of products which the promoters have the effrontery to sell to the medical profession. In 1915 the Council on Pharmacy and Chemistry reported on Urodonal and at that time showed the foolishness of the chemical formula then given. The Council stated that it was improbable that such a substance was a definite chemical compound. The firm submitted no evidence to substantiate the claims. Even at that time the firm was not consistent in statements of composition since it virtually admitted that the product was a mixture. Urodonal is a granular effervescent preparation based on methylglyoxalidine [Lysidine], quinate of diethylene-diamine [Sidonal]

and hexamethylene-tetramine [Formin, urotropine]" Mystery was added by the mention of the undefined 'special products' in the following: "The fact of combining these two salts [Ipsidin and sidonal] in Urodonal, in strictly determined proportions and in the presence of special products, gives this preparation very considerable power in dissolving uric acid." The Council held that Urodonal was marketed under inconsistent statements of composition and with exaggerated therapeutic claims that the name was nondescriptive and the mixture unscientific.

March 24, 1932 the United States federal government officials seized a shipment of Urodonal alleged to have been shipped by George J. Wallau (Inc.) of New York, charging misbranding in violation of the food and drug act. April 26 1932, no claimant having appeared for the property judgment of condemnation and forfeiture was entered. In the libel it was alleged that the article was misbranded in that certain statements appearing in the circular accompanying the article regarding its curative or therapeutic effects, were false and fraudulent, since it contained no ingredient or combination of ingredients capable of producing the effects claimed. The chemist for the government analyzed the stuff and reported that it consisted essentially of methenamine (4 per cent), sodium phosphate (18 per cent), sodium bicarbonate tartaric acid and a small proportion of sugar. (Notice of Judgment Under the Food and Drugs Act United States Department of Agriculture, Food and Drug Administration December, 1932, number 19477.)

#### EFFECTS OF XYLENE TREATMENT OF BURNS

To the Editor—Please give me the physiologic effects of xylene if applied to a raw area such as might be expected in the removal of grease and ointments applied to burns in preparation for tannic acid. In the many experiments trying to show the cause of death from burns have there been any in which a large area of skin is removed surgically and aseptically that show the results on the organism of loss of skin function only? If so what were the results? Please omit name.

M D Texas.

ANSWER—Xylene is a satisfactory agent for the removal of ointments from burned areas, and it apparently does not produce any change in the tissues. At times it causes a mild hyperemia of the skin. A disturbance of one or another of the various functions of the skin—namely respiration excretion, temperature regulation and sensitization—has been made the basis of theories explaining the clinical course that follows extensive burns. It may be possible to use the experimental work of Harrison and Blalock as a basis for determining the effect of the removal of large areas of skin. No direct reference to experimental work of the type mentioned is available. The bibliography attached to the article by E. C. Davidson (*Surg. Gynec. & Obst.* 41:202 [Aug.] 1925) refers to the principal experimental work that has been done along this line.

#### INDICATIONS FOR REMOVAL OF DEAD FETUS

To the Editor—A Puerto Rican woman aged 21 with a full term pregnancy was seen in active labor. She had irregular pains three days prior to admission the pains becoming regular the day before admission and at the time of admission being moderate and occurring every ten minutes. Rectal examination revealed the cervix three fingers dilated the membranes intact the head floating. The patient had not felt fetal movements for three days nor could the fetal heart be heard. This was her second pregnancy. The first pregnancy was terminated by abdominal section because of contracted pelvis (a living male child being delivered) two and a half years before. Pelvic measurements were interspinous 23.0 cm. intercrural 24.0 cm. external conjugate 15.5 cm. transverse of outlet, 8.5 cm. diagonal conjugate 11.5 cm. She had been receiving prenatal care and another section was contemplated. A section and sterilization were performed and a macerated dead fetus was delivered. At the time of the patient's labor every examiner was satisfied that the fetus was dead. In view of such facts as the dead fetus and the cervix dilated three fingers would not a craniotomy have been the procedure of choice? The only objections against craniotomy given were 1. Once a section always a section. 2. Danger of uterine rupture. If a craniotomy was not indicated in this case in what condition would it be indicated? Please omit name.

M D New York.

ANSWER—As a general rule one should not do cesarean section when the baby is dead and macerated. If the ovum is infected a Porro operation might be considered but more often it is safer to deliver from below, especially if the cervix already is taken up and admits three fingers. Rarely does one perform a cesarean section with abruptio placental and placenta praevia—even if the baby is dead.

If there is no infection sufficient dilatation can usually be produced by means of a metrectomy, so that embryotomy can be performed. The danger of rupture of the uterus here is not sufficient to justify another cesarean section.

Most authorities do not subscribe to the dictum 'once a cesarean always a cesarean.' Therefore such cases may be

left to nature. However, it is good practice, as soon as the cervix is dilated, to empty the uterus by craniotomy if the fetus is dead.

In the case reported, the tying off of the tubes leaves the family with only one child, which is always unfortunate and many women regret the sterilization when the only child has died.

#### MILK IN THE DIET AND DENTAL CARIES

To the Editor—Will you please send me what information you have on the experiment conducted at Mellon Institute regarding the effect of lactic acid in milk and other foods on decay in children's teeth. I have been told by a dentist in Milwaukee that the results of such a research problem at Mellon's were published in an authentic health magazine some time ago and I am eager to know what was the purpose of this research, how it was conducted and what were the results. In all the research material to which I have access such as that of Dr. Henry Sherman, Dr. E. V. McCollum and Dr. Lydia J. Roberts all reaction toward the use of milk in the diet of growing children is favorable. So I am wondering if there is some late material that questions the advisability of a daily quart of milk per child. I will deeply appreciate hearing from you in this matter, and I will thank you for the information.

Milwaukee.

ANSWER.—The report of the investigations to which reference is made is published in full in the *Journal of Dental Research*, 12:759. It consists of an elaborate effort to determine the cause and nature of dental caries from the standpoint of the chemist, the bacteriologist and the histologist. Its purpose is to evaluate the importance of two schools of thought regarding the primary cause of dental decay. The older school is represented by those who believe that the exciting cause lies in local environmental factors, and the younger by those who believe that it lies in the field of nutrition. The literature on this subject is reviewed and discussed.

The work was carried out in three parts: (a) a comprehensive study of the effect of acids on enamel, (b) a study of the effects of variations in the saliva on the progress of dental caries, and (c) a bacteriologic survey of carious enamel processes.

While the work is not final, it is stated in the conclusions that local environmental conditions are the main factors in the active causation of decay of fully erupted enamel," and that "deficient diet and defective nutrition by being responsible for the construction of teeth more susceptible to the action of acids of fermentation are the most important factors during the development of the teeth." They add that "improper diet and defective nutrition by being responsible for a salivary environment low in content of calcium phosphate are of some, though minor importance as a predisposing factor in caries of the enamel."

Nothing in this report should disturb those who have been advocating the use of a quart of milk daily for children. In the second part of the conclusions, just quoted, the authors admit the importance of good diet and nutrition during the development of the teeth. Since the development of the teeth is not completed until the twentieth year or thereabouts, and since the authors have thus far failed to prove beyond a reasonable doubt that the lactic acid bacillus is the exciting cause of caries, and since they admit that notwithstanding the campaign of cleanliness alkalization and gum massage waged for many years caries and other dental disorders have continued, there could be only the slenderest argument for eliminating milk from the diet of a child.

#### NAUSEA OF PREGNANCY—LATE EFFECTS OF ABORTION

To the Editor—A woman aged 24 is seven weeks pregnant. Nausea at first mild and infrequent set in between the third and fourth weeks. Now it is more or less constant and often gets worse in the evening. Vomiting with short relief occurred only two or three times. Needless to say the patient is much distressed she feels weak and not herself. About a year ago she had an induced abortion at two months. Since then until the present pregnancy her menses have been scanty and not as red and thick as before the abortion. Will you please comment on the relationship between the abortion the scantiness of menstruation and the present nausea. Belching is another prominent symptom which I could not control. What should be done for the eructations and the nausea? Please omit name.

M D New York.

ANSWER—Induced abortion even when performed under proper aseptic precautions, may lead to disturbances in the sexual functions. Not only may scanty menses occur after such operations but also the reverse, profuse hemorrhages. Other complications that occur after induced abortions are inflammation of the internal genitalia, sterility, spontaneous miscarriages extra-uterine pregnancy, persistent amenorrhea, infections of the urinary tract, and difficulties in subsequent labors.

There is most likely no connection between the abortion and the nausea in the present pregnancy, because about 50 per cent of all women are nauseated in the early months of gestation. Likewise, belching is a common symptom in pregnancy. In order to overcome the nausea the patient should not attempt to eat the usual three meals a day but should take small amounts of solid food, especially starches and sweets every two hours. If part of the food is vomited, more should be eaten immediately. Water should not be taken with these small meals but in the intervals between them. An additional aid is to have the patient eat a few crackers or dry toast in the morning about half an hour before getting out of bed. Belching and heartburn, which are frequently associated may sometimes be prevented by drinking a glass of milk and cream mixture a few minutes before meal time. The fat in the cream and milk prevents the secretion of acid in the stomach. However, in the presence of actual heartburn the fat may aggravate the condition. The usual remedies for belching and heartburn are half a glass of water containing half a teaspoonful of sodium bicarbonate, a teaspoonful of magnesia magma or two or three soda mint tablets.

#### FALSE POSITIVES WITH KAHN TEST

*To the Editor*—A man aged 69 married whose past history is irrelevant to venereal disease about six months ago noticed gradual swelling of the tongue which at present is 50 per cent larger than normal is very red and is covered with mucopurulent nodules. Tendon reflexes are present. There is no Romberg sign no positive Babinski reflex, and the pupils are not of the Argyll Robertson type. He was referred to the hospital laboratories Dec. 1, 1932. His height is 5 feet 5 inches (165 cm.) his weight 134 pounds (61 kg.). A Kahn test gave a four plus. In spite of ten intravenous injections of 0.45 Gm. of neoarsphenamine and seven intramuscular injections of a bismuth compound no change has occurred in the buccal lesion and the pain in the mouth is increasing to a point at which narcotics will be necessary. No dark field examination has been made. Will you kindly advise me whether there are other conditions that give a positive Kahn test? If so what conditions should be considered? Please omit name. M D Illinois.

*ANSWER*—It is extremely rare to obtain false positives with the Kahn test. An illustration of the specificity of this method is found in a recent report that it is not influenced by malaria—a condition wherein other serologic tests occasionally give false positives (Smith, C. R. *J. Lab. & Clin. Med.* 18:396, 1933). In all likelihood however, the tongue condition referred to is not of a syphilitic nature. It is unfortunate that the presence of syphilis in a patient is often rendered responsible for all pathologic conditions in that patient. It should be recalled in this connection that Belote (*THE JOURNAL* June 1, 1930, p. 1985) has emphasized that more than 30 per cent of carcinomas of the tongue have a syphilitic background.

#### REPEATED MISCARRIAGES AND STERILITY

*To the Editor*—A woman aged 26 has had three miscarriages has no children and craves having a family of three or four. She was born in Russia and was 3½ years of age when she came to the United States. Her father is living her mother died in 1911 from cancer of the breast. Three brothers are living. Twin brothers died at premature birth. She has four sisters living all of whom have children. Two brothers married and have children. The patient married at the age of 18 and has had three pregnancies. The first child, premature at six months lived five hours the second child premature at seven months, lived five days the third pregnancy resulted in the premature birth last November at five and one-half months of a child that lived one hour. She has been examined at two different clinics in the larger cities and everything has been found normal even to the Wassermann tests. The last time was in August 1932 while she was carrying the last child and still nothing wrong was found. She has a good appetite sleeps well exercises regularly outdoors walking only does her regular housework and raises a garden each season. She is large of build and weighs nearly 157 pounds (71 kg.). Please omit name. M D North Dakota.

*ANSWER*—A history of repeated late miscarriages always arouses the suspicion of syphilis. A negative Wassermann test, even if repeated, does not always rule out syphilis. It is unfortunate that there were no autopsies made on the fetuses or microscopic studies of the placentas, because such investigations would definitely place the blame on syphilis or rule it out. In spite of the absence of physical signs of syphilis and the negative Wassermann test, it would be advisable to give the patient some injections of neoarsphenamine. This would do no harm and the general effect might help. It is assumed that the patient does not have any constitutional disorder such as anemia hypothyroidism or other disturbance of the glands of internal secretion or a focal infection, or a pelvic condition that might account for the premature termination of pregnancy. The husband should, of course, be carefully examined for evidences of syphilis and mild chronic poisoning such as that due to lead. Even if the physical examination of the husband is negative there still remains the possible explanation that for

some reason the spermatozoa cannot produce full-term children. If examination of the sperm reveals gross abnormalities, an attempt should be made to build up the husband's general physical condition. An important prophylactic measure is to have the patient remain in bed for a number of days at the time when menstruation would have occurred if she were not pregnant. The administration of thyroid often helps, especially in women with low basal metabolic rates.

#### TETANY AFTER THYROIDECTOMY

*To the Editor*—A woman aged 32 had a thyroidectomy performed six and a half years ago because of typical symptoms of hyperthyroidism. At the operation some of the parathyroid tissue was inadvertently removed. She remained in the hospital two weeks during which time she had attacks of tetany about every other day. She then went home where she continued to have these attacks and she returned to the hospital two months after operation. Here she received injections of parathyroid extract and calcium by mouth daily with a decrease in the number of attacks. She returned home where she continued to receive injections of parathyroid extract every other day for over a year. Six or seven months after operation her vision began to diminish owing to the development of cataracts in both eyes. From the time of the operation until now she has had attacks of tetany at frequent intervals. For the last two years she has been taking 20 grains (1.3 Gm.) of calcium lactate three times a day 20 drops of iosterol daily and pills of ferrous carbonate daily. Occasionally ultraviolet therapy has been given. The Wassermann reaction is negative. The blood calcium has never been above 7.5 since the operation it averages 6.8. Blood counts average 78 per cent hemoglobin and 4,100,000 red blood cells. The basal metabolism rate Aug. 2, 1932 was —24. The patient was therefore given synthetic thyroxine by mouth for twenty days ½ mg. daily and thereafter every fourth day for two months with a rise in the basal metabolism rate to —17 and then to —5 (on December 5). Lately the attacks of tetany have been occurring about once a week. Can you suggest any further treatment in addition to that employed? Kindly omit name. M D, Pennsylvania.

*ANSWER*—As to the medical treatment given in this case of postoperative tetany, much freer use of parathyroid extract (from 60 to 100 units daily) is to be suggested in view of the formation of cataracts and weekly tetanic seizures indicating 'missing' parathyroid function. (At times the serum calcium is not low in such a case.) Calcium and thyroid to be sure, can be given at the same time. By mouth, three times a day after eating, 7.8 Gm. (2 drachms) of a mixture consisting of calcium gluconate, 125 Gm. (4 ounces), disodium phosphate, 30 Gm. (1 ounce), sodium bicarbonate sufficient to make 250 Gm. (8 ounces). In addition thyroid extract, 0.03 Gm. (one-half grain) three times a day.

In several severe cases of tetany following thyroidectomies parathyroid glands have been transplanted material obtained at parathyroidectomies on patients with (hyper)parathyroidism being used, even adenomatous glands may be used. For instance, one patient who required up to 100 units of parathyroid extract daily for two or three years was freed from tetany for eight months following transplantation. Then a recurrence was again treated with a similar result for six months. The recurrences were much milder and did not disable the patient any more. In other cases from good to fair results have been accomplished freedom from tetany for from four to eight months with milder recurrences of the disorder.

Further transplants of small pieces of boiled beef bone (3 by 2 by ½ cm.) under the skin of the chest (as recommended by von Oppel's clinic) have contributed to keeping the disturbed calcium metabolism in tetany in equilibrium.

#### FREQUENT SPONTANEOUS ABORTIONS AND STERILITY

*To the Editor*—A woman aged 40 highly active in business has had several abortions at two or three months with the one pathologic specimen examined showing only a cyst instead of a well formed fetus. After thorough gynecologic study the only cause suggested was that of uterine fibroids not definitely found but suspected because of an indefinite uterine outline and fleeting pains in the rectum often darting and knife-like and sometimes slight cramps there occurring almost daily and especially during the abortions. If that is the cause of the abortions, is there any uterine sedative that might make possible a successful pregnancy? Would amnial if it should prove effective given over a period of three or four months in a mild dosage compatible with business in any way endanger the patient? Is there any reason to fear that such a pregnancy might result in an abnormal child? Please omit name and address. M D New York.

*ANSWER*—The specific cause of most spontaneous early abortions is unknown. Undoubtedly however, a defect in the development of the ovum either because of a disturbance in the ovum itself or because of some abnormality in the environment, is usually responsible for the early termination of pregnancy. Fibroids are frequently found in sterile women but whether they are the cause or the effect of sterility is still an unsettled question. They do not, however, often produce early

abortions. In the case cited the finding of a cyst without any tetus indicates that in this particular abortion the ovum failed to develop properly and was therefore expelled. It is unfortunate that a microscopic examination was not made of at least one ovum although in most instances even this kind of a study does not shed much light on the etiology. An undue irritability of the uterus due to a disturbance in its nervous mechanism may be responsible for repeated abortions, but this is difficult to prove. The pains described do not necessarily point to such a condition. Furthermore, drugs such as pituitary extract, ergot and quinine, which have a definite and often powerful stimulating effect on the uterus, nearly always fail to cause the expulsion of a normal gestation. Therefore, a drug administered as a uterine sedative will most likely be of little assistance in preventing habitual abortions. It is not advisable to give amylal over a period of months but, if it should be given, it would have no tendency to result in an abnormal child. A general tonic to build up the patient would be more effective. It is assumed that the patient has had a thorough physical examination to rule out a focal infection, a constitutional disorder such as anemia or a disturbance in the glands of internal secretion, particularly hypothyroidism or a local disturbance such as an acutely retroflected and adherent uterus. Syphilis is responsible for many cases of habitual abortion but very rarely for the early ones. It may be advisable to perform a curettement to make certain that there is no inflammation of the endometrium, although this is rare. The husband may be at fault because undoubtedly in some instances the spermatozoa are not capable of producing healthy, full term offspring. Mild chronic poisoning, such as that due to lead, may account for some of these cases.

#### FEVER OF UNKNOWN ORIGIN

To the Editor—A man aged 62 who had always lived in Minnesota and had always been well was suddenly taken ill seven and a half weeks ago with what was described as the flu consisting of intermittent high fever with severe chills. The temperature ranges from normal to about 104° F but has gone higher on a few occasions. There is no regularity in the type of the intermittence of the fever though the rises of temperature usually occur once daily sometimes oftener. The type of fever is such as might be seen in a severe pyemia. The chills occur every day or oftener in relation to the fever and are severe lasting from twenty minutes to as long as two hours. Physical examination reveals only a moderate tenderness over the liver with a slight enlargement of that organ. All other physical examinations have been negative on numerous occasions. Laboratory examinations have been as follows: The urine shows a moderate amount of albumin and a few hyaline casts. The hemoglobin is 62 per cent. The erythrocytes average 3,800,000. Differential counts have always been normal. A finding of importance in view of the fever is the fact that the leukocyte count has always been between 8,000 and 8,600 never higher. Blood smears examined for malarial parasites have several times been negative. The Wassermann reaction is negative. The Widal test is negative. The Pirquet test is negative. The state board of health reports that the blood is negative for undulant fever, typhoid, typhoid and paratyphoid A and B. Animal inoculation has not been reported on as yet. The mentality of the patient remains good. There has been no mental confusion except on one occasion and that passed off shortly. The patient is slightly depressed. The eye grounds are normal. There has been vomiting of bile or bile-stained contents on a few occasions but the appetite remains good. There has been no diarrhea. The patient sleeps well. Perspiration is profuse after the chills. The pulse ranges between 80 and 120 the rate of respiration between 15 and 20 or 22. Both the pulse rate and the respiration follow the temperature closely. When the temperature is normal the pulse is 80 and the respirations are 15. Would the negative Pirquet test rule out the diagnosis of miliary tuberculosis? When the temperature is normal the patient feels well and wants to get up. The normal leukocyte count should certainly cancel any diagnosis of infections of pus-producing organisms. Please omit name. M D Minnesota

ANSWER—An excellent summary of the subject of fever of unknown origin can be found in an article entitled "Fever of Unknown Origin," by Howard L. Alt and M. Herbert Barker (THE JOURNAL, May 10, 1930, p. 1457). As the authors point out many patients with fever of unknown origin are discharged without any diagnosis only to develop definite clinical conditions later on as malignant disease, endocarditis, tuberculosis, pyelitis, hepatic disease (abscess) and so on. The failure to find malarial parasites should be no bar against the administration of quinine. The authors believe that some of these patients harbor a "smoldering rheumatic infection." Occasionally a cortical renal lesion may not have broken into the tubules and pus will not appear in the urine. Such a patient was seen several years ago in whom pus appeared in the urine after he bent forward and backward several times at the suggestion of an attending urologist. Pyelonephritis may exist without much pain for several weeks before the formation of an abscess sufficient to give localizing symptoms. Conditions that must be looked for without giving any definite evidence are deep seated venous thromboses. A negative Pirquet test does not rule out tuberculosis.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALABAMA Montgomery July 11-14 Sec Dr J. N. Baker 519 Dexter Ave. Montgomery

CALIFORNIA Regular San Francisco July 10-13 and Los Angeles, July 24-27 Reciprocity Los Angeles July 24 Sec, Dr Charles B. Pinkham 420 State Office Bldg. Sacramento

COLORADO Denver, July 5-8 Sec Dr Wm. Whitridge Williams 422 State Office Bldg. Denver

CONNECTICUT Regular Hartford July 11-12 Endorsement July 25 Sec Dr Thomas P. Murdock 147 W. Main St. Meriden. Homeopathic New Haven, July 11 Sec Dr Edwin C. M. Hall 82 Grand Ave., New Haven

DISTRICT OF COLUMBIA Basic Science Washington June 29-30 Regular Washington July 10-11 Sec Dr W. C. Fowler 203 District Bldg. Washington

ILLINOIS Chicago June 27-30 Supt. of Regis. Mr Paul B. Johnson State House, Springfield

MAINE Augusta July 5-6 Sec, Dr Adam P. Leighton Jr 192 State St. Portland

MISSISSIPPI Jackson June 22-23 Asst. Sec, Dr R. N. Whitfield Jackson

NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II The examinations will be held at centers where there are five or more candidates June 26-28 and Sept. 13-15 Ex. Sec., Mr Everett S. Elwood 225 S. 15th St. Philadelphia

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NORTH DAKOTA Grand Forks July 5-8 Sec Dr G. M. Williamson 4 1/2 S. 3rd St. Grand Forks

OREGON Portland July 4-6 Sec Dr Joseph F. Wood 509 Selling Bldg. Portland

PENNSYLVANIA Philadelphia and Pittsburgh July 11-15 Sec Mr Charles D. Koch 400 Education Bldg. Harrisburg.

RHODE ISLAND Providence July 6-7 Dir. Dr Lester A. Round 319 State Office Bldg. Providence.

SOUTH CAROLINA Columbia June 2-7 Sec, Dr A. Earle Boozer, 505 Saluda Ave. Columbia.

SOUTH DAKOTA Watertown July 18 Dir., Dr P. B. Jenkins, Watway

UTAH Salt Lake City June 28-29 Dir. Mr S. W. Golding 326 State Capitol Bldg. Salt Lake City

WASHINGTON Basic Science Seattle, July 13-14 Regular Seattle, July 17-18 Dir., Mr Harry C. Huse Department of Licenses, Olympia

WISCONSIN Milwaukee, June 27-29 Sec Dr Robert E. Flynn 401 Main St. La Crosse.

### South Dakota January Report

Dr Park P. Jenkins, director, South Dakota State Board of Health, reports the oral, written and practical examination held in Pierre, Jan. 17-18, 1933. The examination covered 15 subjects and included 105 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Three physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Loyola University School of Medicine		(1931)	86
Rush Medical College		(1930)	90
University of Illinois College of Medicine		(1932)	87
University of Nebraska College of Medicine		(1925)	88

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville School of Medicine		(1931)	Kentucky
Creighton University School of Medicine		(1931, 2)	Utah

### Wyoming February Report

Dr W. H. Hased, secretary, Wyoming State Board of Medical Examiners, reports the written examination held in Cheyenne, Feb. 6, 1933. The examination covered 12 subjects. An average of 75 per cent was required to pass. One candidate was examined and passed. Three physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1930)	85.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine		(1928)	Iowa
University of Louisville Medical Department		(1910)	Indiana
St. Louis University School of Medicine		(1928)	Missouri

## Maryland February Report

Dr Henry M. Fitzhugh, secretary, Board of Medical Examiners of Maryland reports 2 physicians licensed by examination and 3 physicians licensed by reciprocity with other states, Feb 17, 1933. The following colleges were represented

LICENSED BY EXAMINATION		Year	Number
College		Grad	Licensed
Miami Medical College	Ohio	(1891)	1
University of Oregon Medical School		(1925)	1
LICENSED BY RECIPROCITY		Year	Reciprocity
College		Grad.	with
University of Georgia Medical Department	(1911)	(1925)	Georgia
Johns Hopkins University School of Medicine		(1926)	Ohio

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Book Notices

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**The Common Cold with Special Reference to the Part Played by Streptococci Pneumococci and Other Organisms** By David Thomson and Robert Thomson. Annals of the Pickett Thomson Research Laboratory volume VIII. Published for the Pickett Thomson Research Laboratory London. Paper. Price \$15 £3 3s. Pp 738 with illustrations. Baltimore: Williams & Wilkins Company, London: Baillière Tindall & Cox 1932

This large volume is chiefly a review of the literature on the common cold. The authors do not believe that the common cold is a definite single disease caused by one organism but a group of diseases caused by several different species of organisms. They divide colds into three groups—bacterial, allergic, and possibly virus colds. Their fifteen years of "exceedingly careful" study of the bacterial flora of the respiratory tract in a limited number of persons during health and during colds led them to conclude that pneumococci, B influenzae, streptococci and M catarrhalis are definite primary causes of colds. They point out that Webster and Hughes and Clow in America have come to the same conclusion after careful research. There is abundant scientific proof they say, which shows that chill is an important predisposing cause of colds. The incidence of colds in a community immediately rises after a sudden spell of cold weather. The popular view that overcrowding indoors in stuffy atmospheres increases the chances of infection is also correct. Other predisposing factors are fatigue, damp clothing, bad ventilation, nasal obstruction, gastro-intestinal infections, and an inborn insusceptibility. Old clothes may harbor the infection. It is important to change damp clothing after finishing work or exercise, otherwise there is a chilling effect produced by evaporation. It is especially dangerous to go driving in an open automobile after perspiring. In preventing colds, the authors believe that the most important measure is to remedy defects in the nose, such as removal of adenoids and polypi, and removal of enlarged and unhealthy tonsils. Ultraviolet rays are excellent during the winter months in increasing resistance to colds. The authors emphasize cleanliness and the avoidance of crowded places during epidemics. One should also avoid patients in sickrooms and dust laden atmospheres. This volume is especially valuable for its bibliography as the authors have extracted information from about 2,000 research papers on the common cold.

**Quantitative Clinical Chemistry Volume II Methods.** By John P. Peters M.D. M.A. Professor of Internal Medicine Yale University School of Medicine and Donald D. Van Slyke Ph.D. Sc.D. Rockefeller Institute for Medical Research. Cloth. Price \$10. Pp 837 with 95 illustrations. Baltimore: Williams & Wilkins Company 1932.

The review for volume I remarked that 'this monograph will take its place as the leading reference work for a summary of the information that has been published on the subject. The appearance of the companion volume, on laboratory methods, is awaited with interest'. Volume II maintains the high standard established in the first volume. The authors have not covered all of the laboratory methods of quantitative clinical chemistry, but those that were included in the book have been tested as far as possible by the authors or were such as would meet the critical standards set by the authors. Wherever possible a gravimetric, titrimetric, colorimetric or gasometric procedure with macro and micro forms has been presented. In view of Van Slyke's extensive experience with gasometric methods it is hardly surprising despite the original intentions of the authors to include one of the three general

methods of analytic chemistry, that a large portion of the book is devoted to gasometric methods.

The volume is more than a collection of analytic methods. The principles on which the methods for the determination of the various clinically important groups included in the book are based are discussed at the beginning of each chapter. The range of the book is shown by the material of the thirty-three chapters: general chemical technique, special biochemical technique, analyses of gas mixtures, carbon dioxide and oxygen tensions in alveolar air, respiratory metabolism, lung volume, gasometric methods for analysis of blood and other solutions, sugar, lipoids total and nonprotein nitrogen, urea, urinary ammonia, amino acids, uric acid, creatine and creatinine, lactic acid, acetone, acetoacetic acid and beta-hydroxybutyric acid total organic acids, phenols, hemoglobin and its derivatives, proteins in urine, blood plasma and body fluids, blood volume, total base, sodium and potassium, calcium, magnesium, the  $pH$  of blood and urine, bicarbonate, titratable acid and acid-base excretion in urine, chloride, phosphorus, sulphur and an appendix. The arrangement follows quite closely that of the first volume. An ample bibliography follows each chapter.

Despite the uncertainty that all of the chromogenic material in blood is creatinine and creatine, the authors devote a chapter to methods for the determination of creatinine. This is justified by the authors because of the significance it has in nephritis, and also because of the possibility that the significance of the chromogenic matter may be clarified by future work. The appearance of this book is another indication of the trend of clinical chemistry from qualitative to quantitative methods. The methodology of the book is significant for teachers of biochemistry in medical schools.

**Practical Anaesthesia** By the Anaesthetic Staff of the Alfred Hospital Melbourne. With a foreword by F. H. McMechan A.M. M.D. Secretary General International Anaesthesia Research Society. Monographs of the Baker Institute of Medical Research No 1. Fabrikoid. Price 10/6d. Pp 249 with 70 illustrations. New South Wales: Australasian Medical Publishing Company Ltd 1932.

This monograph is based on a series of lectures delivered to junior house officers of the Alfred Hospital at Melbourne and is published in seventeen chapters with two appendices. Although didactic and concise, the style is flowing and holds the reader's interest. While 168 references prove a wide acquaintance with the literature, the work is largely original and abounds with striking statements of fact well calculated to hold the student's attention. For example 'In the ordinary operation there are three persons, all of whom play parts of great importance, namely, the patient, the surgeon and the anesthetist. No one of these can be said to play a less or greater part than another, and each of them is, for the time, dependent on the other two. During the operation, the anesthetist still finds himself playing an important role.

Almost literally, he holds a life in his hands and those hands must never loosen their hold'.

In Australia, the ethyl chloride open ether sequence is the routine anesthetic. Ethyl chloride is acknowledged to be more dangerous even than chloroform, yet the advantages of convenience and portability are allowed to outweigh the greater safety of the nitrous oxide-oxygen-ether sequence so extensively used in America. Ether is administered by the drop method, with insistence on an open airway and freedom from cyanosis, which might well be followed in our own hospitals. Nitrous oxide and ethylene are both in use. 'Probably, in the average case one gas is as good as the other. Better relaxation is obtainable with ethylene. Nitrous oxide is definitely preferable in thyroid surgery'. Three methods of induction are recommended: (a) pure oxygen followed by pure nitrous oxide or ethylene, (b) delivery of the maintenance mixture from the start, (c) pure anesthetic gas to which oxygen is added as indicated. The recommendation is that the inexperienced anesthetist try all these methods and choose that which gives the best results in his hands. It would seem a wiser plan that the instructor elect the method and teach this technique to the student.

The advantages of premedication are listed as securing mental rest for the patient, securing safer and better anesthesia, mitigating the toxicity of local anesthetics, and lessening the secretion of mucus. Administration of sedatives in large doses to produce the condition termed "basal narcosis" is not recom-

mended except in the rare instances when such narcosis is clearly indicated. The full discussion of accidents and sequelae of anesthesia will be appreciated by the student.

The technic of spinal anesthesia is well described. Its use is restricted because of the difficulty of controlling or predicting the degree of subsequent circulatory and respiratory depression. The use of regional and local anesthesia is given in outline and reference made to more extensive studies of this topic.

The advantages of endopharyngeal anesthesia are discussed from the standpoint of the patient, who experiences a safe and even anesthesia, from the standpoint of the surgeon, who finds available a continuous anesthesia with a clear operative field, and from the standpoint of the anesthetist, who readily controls the depth of anesthesia maintained at a light and even level. Endotracheal anesthesia is covered in the longest chapter of the book. Endotracheal insufflation using ether, chloroform or the gaseous agents is discussed and its advantages are indicated. Endotracheal inhalation, by the methods of Flagg and of Magill is minutely described.

The work is ably introduced by the foreword of Dr. F. H. McMechan. It is completed by an index which occupies the last eighteen pages. Of the seventy illustrations sixty-five are original. The book is well printed and strongly bound. It may be read with profit by all students of anesthesia and by teachers who will find much that is worthy of imitation in this course of lectures.

**Die Grundlage der Geschwulstlehre.** Von Dr. K. A. Heiberg. Paper. Price 4 marks. Pp. 75 with 11 illustrations. Leipzig: Curt Kabitzsch. 1933.

This pamphlet is devoted to the development of the theory that the change in the cell which induces cancer is an alteration in the chromosome number which in turn produces a new race of cells with enhanced growth capacity. The author's measurements of cells in fixed tissues show that in general the nucleus of malignant cells is larger than in normal cells, the nucleoli also, and that the number of chromosomes is increased. He attributes the invasive properties of the cells to their increased growth energy which is in turn due to the increase in cell dimensions, coupled with hyperplastic changes in the connective tissue stroma, which contribute to the isolation of the rapidly growing neoplastic cell and hence invasion and ultimate metastasis. There must also be assumed a susceptibility of the organism as a whole, which plays a part in the cell alterations. "Cancer is therefore a problem of cell growth" as has for many years been stated by other students of the subject. The author suggests as an important problem the thorough study of the influence of hormones and vitamins in connection with this susceptibility. There is nothing particularly novel in these ideas of Heiberg's, for many of them have been in print for years and certainly there is no evidence that vitamins play the slightest part in the production of cancer, nor is there any sound experimental evidence that the hormones, when produced in either excessive or diminished amounts, play any part in the tumor process. A good bibliography of pertinent reference is appended.

**What to Tell the Public About Health. A Collection of Short Articles Aimed to Present in Simple Terms the Facts About the Prevention of Disease and the Promotion of Health.** Cloth. Price \$2. Pp. 255 with illustrations. New York: American Public Health Association. 1933.

This is a collection of articles reprinted from the syndicated health bulletin which for the past five or six years has been furnished by the American Public Health Association to health officers either unable to write their own bulletins or so firmly convinced of such inability that the effect is the same. It has the strength and the weaknesses of all syndicated material, namely, that it is accurate, dependable and probably better written than local productions would be while on the other hand it lacks the definite local applicability and interest that attach to a strictly home product. One section deals with newer books about health education and still another contains the names and addresses and a brief statement of services offered by organizations that supply health education material. This list includes commercial organizations, which have been selected, with one or two exceptions, in an acceptable manner. The book is not copyrighted, but permission to use the articles should be requested of the American Public Health Association. This is a book which can be commended to the attention of

public relations and educational committees of county medical societies. The brief character of its articles and the attractive make-up of the book, with many illustrations and cartoons, would seem to recommend it to doctors for their waiting room tables.

**Die Blutkrankheiten in der Praxis.** Von Professor Dr. P. Morawitz. Klinische Lehrkurse der Münchener medizinischen Wochenschrift. Band I. Second edition. Paper. Price 2.50 marks. Pp. 70. Munich: J. F. Lehmann. 1933.

This treatise consists of ten chapters, covering practical methods of blood examination for the practitioner, diagnosis of pernicious anemia, cause and treatment of pernicious anemia, constitutional hemolytic anemia, pathology and treatment of chlorosis and secondary anemia, the leukemias, lymphogranuloma and other leukemoid diseases, hemorrhagic diathesis, polycythemia and other megalosplenias, and symptomatic changes in the blood. The author urges the use of fresh films for rapid study and the Jenner-May-Grunwald stain with methylene blue as a suitable stain for the study of leukocytes. In pernicious anemia he recommends the use of fresh liver juice as most generally valuable and speaks of the use of six weeks' intensive therapy with arsenic. He strongly recommends splenectomy in chronic hemolytic icterus. True chlorosis is on the increase in Germany, Switzerland and Scandinavia. It affects only females at the age of puberty. The attacks are periodic and especially during winter. Menstrual irregularity in the milder cases and amenorrhea in the severe cases is the rule. Achlorhydric anemia is a disease of women above 20 and responds to large doses of hydrochloric acid and iron. Iron is of no use in the anemias of tuberculosis, cancer, nephritis or sepsis. In one case of acute aplastic anemia the author found improvement by massive transfusion and splenectomy. In the leukemias he warns against the use of benzene and splenectomy. Roentgen therapy may make the condition acute and lead quickly to death. In the hemorrhagic maladies, he mentions three preliminary tests in diagnosis: bleeding time, Rumpel-Leede phenomenon, Koch's test, and the determination of the time of disintegration of blood platelets and also their count. In conclusion he emphasizes the necessity for the study of the chemistry as well as the physicochemical properties of the blood and the influence of outside agencies and the methods of determining various poisons in the blood. The treatise is sound, deals with known facts as far as possible, and has enough of the personal point of view of an experienced clinician to make it of interest to the practitioner.

**Prominent Danish Scientists Through the Ages with Facsimiles from Their Works.** Edited by V. Nielsen, M.D. University Library of Copenhagen. 400th Anniversary. Paper. Pp. 195 with illustrations. Copenhagen: Levin & Munksgaard. 1932.

This is a commemorative volume containing brief sketches by different authorities of forty-five leading Danish men of science of the past, with concrete reviews of their most important achievements. A conspicuous and interesting feature is the facsimile reproduction of a characteristic fragment of the work of each scientist—"a page of manuscript, a printed page of text, a title page or a plate." Medicine is well represented, eighteen of the forty-five scientists being listed as physicians. By this book the University Library of Copenhagen pays a worthy and fitting tribute to Danish leaders in scientific work.

**Arbeit und Gesundheit. Sozialmedizinische Schriftenreihe aus dem Gebiete des Reichsarbeitsministeriums.** Herausgegeben von Professor Dr. Martinick, Ministerialdirektor im Reichsarbeitsministerium. Heft 21. Die soziale Bedeutung und Beurteilung der Kreislauferkrankungen. Von Dr. med. Franz Grünbaum, Reg. Med. Rat und Leiter der Versorgungs-Kranstalt Bad Nauheim. Paper. Price 4.50 marks. Pp. 128 with 20 illustrations. Leipzig: Georg Thieme. 1933.

This booklet concerns itself with tuberculosis and heart disease in the field of industrial hygiene and public health. It is especially directed to the day by day physical exaction of work and the increased susceptibility of the worker to occupational diseases and the early causation of degenerative disease because of this day by day immeasurable toll taken by all prolonged physical labor. Throughout are many references to the application of the German workmen's compensation law, and particularly the occupational disease law. The author advocates compulsory physical examination, increased medical care, hospitalization, and baths wherever indicated. Among other headings, the following are cited as reflecting the general

trend of the booklet's contents facts regarding the length of life and general health of the nation, rates of deaths from various diseases, numbers of those involved but still alive cause of these conditions and the rehabilitation of the patient, rheumatism, syphilis and arteriosclerosis as contributing factors and their influence on the "span of life", determining the patient's ability for work the enlarged heart and its relation to bodily function palpitations high blood pressure chronic cardiac weakness as related to ability to work, trauma and the impaired heart the social problem involved bath cures and sanatorium treatment, social interest, financing and obligations involved.

**Panamá y su legislación social** Por el Doctor José Guillermo Lewis  
Cloth Pp 254 Madrid Javier Morata 1932

This book presents the efforts made in Panama in the years 1929 and 1930 to promote the public health and safety of its people. The author has been instrumental in advancing public health conditions in Panama. As a result, some laws safeguarding the public health are now existent. One of the first laws passed was law 23 of 1930 providing for the welfare of the pregnant women employed in the industrial and commercial houses. These women shall not work for a period of eight weeks before and after childbirth. Foundling hospitals for the care of the children have been established and these are under the direction and guidance of the department of national hygiene. There exists a section of industrial hygiene which performs periodic health examinations of the employees of the industries. There are many letters and editorials in this book by prominent individuals of Panama and foreign countries discussing the necessity of public hygienic measures in Panama and praising the noteworthy work done by Dr Lewis for the people of Panama.

**Practical Food Inspection** By Charles R A Martin M.R.S.I  
A.M.I.S.E. Senior Sanitary Inspector Whitstable In two volumes  
Volume I Meat Inspection Cloth Price 15/- Pp 312 with 138  
Illustrations London H K Lewis & Company Ltd 1932

This is the first volume of a work on the important postwar technical and administrative development in food inspection in England for inspectors and students written by a practical inspector and comprising data collected during routine inspections over a period of years. The illustrations of pathologic conditions are drawings of actual morbid specimens from slaughterhouses. The matter is condensed for practical use, scientific details superfluous to working needs of inspectors have been omitted, but animal pathology is quite completely treated. The volume includes chapters on physiology and comparative anatomy, age indications sexual differences and antemortem inspection, slaughterhouses and slaughtering dressing of animals and preparation for sale, a system of meat inspection, physiologic abnormalities and malformations, pathologic abnormalities, infectious diseases, chronic diseases, septic diseases, contagious diseases, parasites, and preservation of meat. A glossary of terms is appended. The book is useful for government meat inspectors and health officials.

**Morale The Mental Hygiene of Unemployment for Unemployment Relief Workers Social Workers Public Health and Visiting Nurses Community Chest Executives Public Officials Clergymen and Members of Boards of Philanthropic Organizations** By George K Pratt M.D.  
Paper Pp 64 New York National Committee for Mental Hygiene, 1933

This booklet is frankly intended for social workers and those who have to do with the unemployed. It is written in a manner which indicates that the writer has more than a theoretical knowledge of psychic and psychologic problems connected with the administration of charitable relief. The book goes into a number of important problems, beginning with a discussion of how mental health is affected and dealing at length with the question of security or insecurity and its influence on people's attitudes. The conditions necessary for good mental health are briefly outlined, emphasizing the importance of work and of "blowing off steam" through such devices as soap box oratory. The effect of depression on family life is considered, including relationships between former wage earners and their former dependents and especially, the adolescent members of the household. The book concludes with suggestions emphasizing that rules cannot be offered. There is a good bibliography. The book has a combined index and table of contents in the front,

and the important paragraphs have conspicuous headings. The make-up is attractive. The price makes it possible for any one to have it, and it should be in the hands of social workers and others who have to do with the unemployed.

**Kinderärztliche Technik Zum Gebrauch in Klinik und Praxis** Von Dr Hans Behrendt Kinderarzt am St. Markus Krankenhaus Frankfurt a. M. Boards Price 6 marks Pp 122, with 73 illustrations Leipzig Georg Thieme 1933

This manual contains information designed to acquaint the practicing physician with the special technic and methods used in pediatric practice. Methods for introduction of fluids and foods into the stomach and for obtaining samples of gastric and duodenal contents are given. The rectal drip, enemas, intubation and inhalation methods are described. The technic for pericardial and pleural puncture is given, though the illustrated implements for the latter procedure, pictured on pages 25 and 27, are rather formidable looking weapons. Such procedures and methods as intraperitoneal injection, intrasinus puncture and intravenous injection, and transfusion are discussed and illustrated. The various skin tests are described, and methods for lumbar, cisternal and ventricular puncture are elucidated. The average intern in a good pediatric service will have mastered all the technical procedures described. Several excellent manuals on pediatric procedures and technic, published in English, have been available for the last few years.

**Die wichtigsten Vergiftungen Fortschritte in deren Erkennung und Behandlung** Von Erich Leschke a. o. Professor für Innerer Medizin an der Universität Berlin Mit einem Anhang Zur Prophylaxe der Vergiftungen. Von Ministerialrat Professor Dr Franz Koelsch Die Erkennung von Vergiftungen an der Leiche Von Professor Dr Karl Meißner Klinische Lehrkurse der Münchener medizinischen Wochenschrift Band XI Paper Price 6 marks Pp 308 with 29 illustrations Munich J F Lehmann 1933

The author deplors the fact that a knowledge of toxicology is not more generally in the possession of the medical profession. According to Zangger, 80 per cent of cases of poisoning are not recognized. This book differs from most others on toxicology in that it is not written by a pharmacologist but by a clinician and for clinicians. In Germany, barbitol poisoning is most frequently encountered (seventy-seven cases) with morphine next in order (forty-five cases) and compound solution of cresol, adalin hydrochloric acid and phenobarbital (each about ten cases) accounting for two thirds of all cases of poisoning in a certain series and most of these suicidal. The exposition of the subject is so thoroughly modern that it is a book well worth having even in a library that boasts any number of books on toxicology.

**Trafikdødsfald i retsmedicinsk Belysning En retsmedicinsk Studie paa Grundlag af 380 legale Obduktioner af Individuer omkomne i Trafikken** Af Torben G Knudtzon [Traffic Mortality from Point of View of Legal Medicine Medicolegal Study on Basis of 380 autopsies of Individuals Killed in Traffic Accidents] Paper Pp 351 with 26 illustrations Copenhagen Levin & Munksgaard 1932

This monograph analyzes in detail the results of legal necropsies in the medicolegal institute in Copenhagen in 380 traffic deaths. It is an important contribution to medicolegal literature. There are chapters on the nature of the material studied, on the external and internal lesions produced under various circumstances, on the causes and modes of death in traffic accidents, and on the legal aspects of modern traffic death. It is shown that in certain cases the character of the lesions in the dead body may point to a particular kind of traffic trauma. An important outcome of this work is emphasis on the need of a complete medicolegal necropsy in practically every instance of death connected with street or highway traffic. A necropsy is required if an effort is to be made to answer as fully as possible the many questions that may be presented by such deaths. In Europe, legal necropsies are practiced on an increasing scale in this field.

**Behind the Door of Delusion** By Inmate Ward 8 Cloth Price \$2 Pp 325 New York Macmillan Company 1932

This book was written by a patient in a state hospital for the insane. He went in of his own volition for dipsomania, and this book, having passed through several printings, will probably pay his expenses. It is a revelation of the lives of the inhabitants of such institutions. Dr Jelliffe considers its author one of the sanest authors of the season. This is not necessarily a compliment. The book is well written.

## Archives of Neurology and Psychiatry, Chicago

29 213 432 (Feb.) 1933

- \*Use of Carbon Dioxide Mixtures in Stupors Occurring in Psychoses F C d'Elseaux and H C. Solomon Boston—p 213
- Action of Scopolamine and Carbon Dioxide on Catalepsy Produced by Bulbocapnine. A S Paterson London England and C P Richter Baltimore.—p 231
- \*Syphilitic Amyotrophy R P Mackay and G W Hall Chicago—p 241
- Action Currents in Central Nervous System. L J Saul and H Davis Boston—p 255
- Hysterical Anesthesia Analgesia and Astereognosis Experimental Study R R. Sears and L H Cohen New Haven Conn.—p 260
- Electric Action Potentials in Muscles During Recording of Mechanical Tonus Tracings. J C. McKinley and N J Berkwitz Minneapolis—p 272
- \*Gliomas Arising from Region of Cauda Equina Clinical Surgical and Histologic Considerations. J W Kernohan H W Woltman and A. W Adson Rochester Minn.—p 287
- Normal Histology of Intradural Filum Terminale J W Harmer Rochester Minn.—p 308
- \*Subacute Combined Degeneration of Spinal Cord Study of Underlying Pathologic Process. N W Winkelman Philadelphia and C Davison New York.—p 317
- Myelitic and Myelopathic Lesions (Clinicopathologic Study) L. Myelitis C Davison and M Keschner New York.—p 332
- Nerve Degeneration in Poliomyelitis VI Changes in Motor Nerve Endings H Chor, St. Louis—p 344

**Carbon Dioxide Mixtures in Psychoses**—D'Elseaux and Solomon observed thirty patients in their response to inhalation of carbon dioxide. They studied the responses in one of the patients in detail, and the data obtained form the chief basis for their study. In all the cases the condition was classified as stupor on the basis of a more or less complete lack of contact with the environment as shown by the overt behavior. They describe several different means of arousing patients from stupors and the changes induced by them. The authors conclude that not one of the physiologic changes is essential to the arousal. The change in the mental activity of the patient appears to depend on the nature of the shock to the body economy caused by each procedure used. Certain psychologic factors have been shown to alter the response. It is believed that none of the hypotheses known and advanced in explanation of the phenomena are adequate. The work indicates that the physiologic and mental factors complement each other.

**Syphilitic Amyotrophy**—Mackay and Hall report four cases representing a form of progressive muscular atrophy due to syphilis. As a group these cases exhibit historical physical and serologic evidences of syphilis, the atrophy often begins with pain, most frequently involves the upper extremities and not uncommonly occurs first in the shoulders and simultaneously or later in the hands, and it may be extremely patchy in its distribution. The pyramidal tracts may or may not be involved. The pathology of the group reveals much confusion but seems to indicate a syphilitic meningo-radiculo-myelitis as the basis for most cases, with the question of a truly parenchymatous and selective syphilitic disease of the anterior horn cells as yet unsettled. The authors believe that vigorous antisyphilitic treatment in syphilitic amyotrophy can do no harm and may in many cases do much good. When a reasonable suspicion exists as to a syphilitic etiology, they are convinced that active treatment should be instituted with a judicious combination of arsphenamine trypanamide, preparations of bismuth and mercury, and the administration of artificial fever.

**Gliomas in Region of Cauda Equina**—Kernohan and his associates base their histologic observations on a study of twenty-five cases of tumor of the spinal cord. The histologic structure of the spinal cord is similar to that of the brain, and in their study of intramedullary tumors they found them to correspond in type with tumors arising from the substance of the brain. Most of the gliomas that occurred in the region of the cauda equina arose either from the conus medullaris or from the intradural filum terminale, although it is possible that some at least could have arisen from glial or ependymal heterotopic masses attached to the nerve fibers of the cauda equina. As in cases of tumors situated elsewhere in the spinal canal, pain was the initial complaint in more than 80 per cent of the cases. The pain suggested a tumor in twelve of the twenty-five cases, it suggested sciatic neuritis in four, and it was atypical for either a tumor or neuritis in eight. The pain was limited entirely to the spinal region in two cases to the sciatic

distribution in two and to the back and to the sciatic distribution on one or both sides in twenty-one cases, and it presented the superficial appearance of bilateral sciatica in sixteen cases. The most diagnostic data were obtained on spinal puncture. The fluid removed was yellow in eighteen cases, and the needle entered the tumor in eight. A spinal puncture should be done as part of the general examination in more cases in which one suspects sciatic neuritis. Fifteen of the eighteen tumors of the filum terminale were completely removed and three were only partially removed. Recovery for periods up to thirteen years without recurrence has been obtained with the removal of the tumor and wide resection of the filum terminale. Only partial and temporary relief was obtained by partial resection, decompression and roentgenotherapy. Complete resection of the tumors was done in one case and partial resections in six cases in which the lesion involved the conus medullaris and the filum terminale. Two of these patients recovered to the extent that they were able to carry on their regular vocations for three years. The remaining patients did not improve appreciably. The resection of the conus medullaris containing the tumor is justifiable if there is a fair prospect of including all visible growth.

**Degeneration of Spinal Cord**—Winkelman and Davison state that in a study of twenty-five cases diagnosed as pernicious anemia with changes in the spinal cord, twenty presented nothing unusual in the histologic pictures. These showed the typical funicular myelopathy that is characteristic of this disease. In five cases there was, in addition, a perivascular round cell infiltration, mainly in the posterior and lateral portions of the spinal cord. Differential staining methods were used in an effort to determine whether the condition was inflammatory or degenerative. The majority of the perivascular cells proved to be of the compound granular cell type in the cases of pernicious anemia. In contrast to this, dementia paralytica was studied by the same methods, and the plasma cell and lymphocyte were found to be the predominating round cells. The term 'small round cell infiltration' is therefore a noncommittal description of cells lying in the perivascular spaces. While it is true that degeneration is part and parcel of an inflammatory process, inflammation is not usually part of a degenerative condition. The authors think it is worth while to make a distinction between inflammation and degeneration, only by this distinction will it be possible to arrive at a knowledge of the basic type of change that is going on.

## Arkansas Medical Society Journal, Little Rock

29 181 204 (Feb.) 1933

- \*Indications for Surgery in Pulmonary Tuberculosis F H Krock, Fort Smith—p 181
- Economical Side of Medical Practice. J S Wilson, Monticello.—p 188
- \*Kline Test for Syphilis F M Smith Hot Springs.—p 192

**Surgery in Pulmonary Tuberculosis**—Krock believes that the surgical treatment of pulmonary tuberculosis is able to save about 40 per cent of the patients with far advanced tuberculosis in whom it is indicated. The indications for phrenicectomy are (1) in predominantly proliferative tuberculosis with cavitation, especially as a preliminary procedure to thoracoplasty, (2) as an independent procedure in the proliferative type with cavities in the lower or middle lobes, (3) in circumscribed disease of the upper lobe, (4) in the severe and moderately severe progressive febrile predominantly exudative type of phthisis when no result has been obtained by pneumothorax, and in which light or moderately severe involvement of the opposite lung may be present, (5) in the unilateral fibrotic type with tachycardia due to displacement of the heart, (6) to relieve persistent hemoptyses when pneumothorax is unsuccessful, (7) in the treatment of recurrent fluid, especially tuberculous empyema, and (8) in those cases of satisfactory collapse after artificial pneumothorax when refills at the necessary intervals cannot be obtained by the patient. The chief indications for thoracoplasty are (1) severe unilateral tuberculosis with cavities which has not responded to other measures of treatment, (2) moderately severe proliferative tuberculosis with marked deviation of mediastinum and interference with the heart action, (3) unilateral, chiefly exudative, type of infection which is progressive in spite of pneumothorax treatment, (4) empyema following pneumothorax, with or

without drainage, (5) repeated severe hemoptyses not controlled otherwise, and (6) treatment of spontaneous pneumothorax of the valvular type.

**Kline Test for Syphilis**—Smith made a comparative study between the Kline test and the Kahn and the Kolmer modification of the Wassermann reaction on 3,600 blood specimens. These serums were inactivated at 37 C for thirty minutes. The Kolmer and Kahn tests were run according to their respective techniques. The Kline emulsion was made up according to the formula given in the October 1932 issue of the *Journal of Laboratory and Clinical Medicine*. Of the 3,600 specimens tested, 2,039 were negative and 962 were positive in all three tests, thus giving a complete agreement on 30,001 tests, or 83.69 per cent. The Wassermann and Kline reactions agreed in 87.09 per cent, the Kahn and Kline in 84.69 per cent, and the Wassermann and Kahn in 90.21 per cent. Of the serums tested, 599 or 16.31 per cent, failed to agree in one or more of the three reactions. These serums were classified as proved syphilitic, treated or untreated, doubtful syphilitic, treated or untreated, and nonsyphilitic. The author concludes that his work proves the Kline test to be an accurate serologic test for syphilis, having certain distinct advantages over the Kahn, Kolmer and Wassermann, in that the simplicity of the Kline technic and stability of the antigen decreases the source of error and makes it a desirable laboratory procedure.

### Illinois Medical Journal, Chicago

63 93 192 (Feb.) 1933

- When Cause of Heart Disease Is Obscure. E. Keating, Chicago.—p. 116.  
Internal Ocular Hemorrhage. A. E. MacDonald. Toronto, Canada.—p. 120.  
Recent Developments in Treatment of Chorea Minor. W. M. Whitaker, Quincy.—p. 123.  
Xanthomatosis. Schüller-Christians Disease. W. W. Dalitsch, Chicago.—p. 131.  
Purpura Hemorrhagica of Schoenlein-Henoch Type. Report of Case. J. S. Clark. Freeport.—p. 138.  
Crimes of Cooking. H. T. Byford. Chicago.—p. 141.  
Therapeutics of Sulphur. E. Podolsky. Brooklyn.—p. 145.  
Some Respiratory Manifestations in Circulatory Disease. I. M. Trace, Chicago.—p. 148.  
Fluid Balance. C. H. Miller Jr., Chicago.—p. 152.  
Degenerative Heart Disease. H. H. Cole. Springfield.—p. 156.  
Biochemistry of Blood as Differential Diagnostic Aid in Diseases. B. L. Monias. Chicago.—p. 161.  
Some Uses of Picrotol with Especial Reference to Chronic Otitis Media. V. R. Vanstane. Chicago.—p. 168.  
Argyria Associated with Heretofore Unreported Colloidal Silver Preparation. C. J. Lundy. Chicago.—p. 173.  
Incidence of Pulmonary Tuberculosis Among Students in Nursing Schools. D. O. N. Lindberg. Decatur.—p. 173.  
Prophylaxis of Prostatism. C. O. Ritch. Chicago.—p. 175.  
Notes on Recent Progress in Otolaryngology. T. C. Galloway. Evanston.—p. 177.  
Surgery in Pulmonary Tuberculosis. R. B. Bettman. Chicago.—p. 181.

**Treatment of Chorea Minor**—Whitaker discusses the two outstanding therapeutic procedures in vogue today for the treatment of chorea minor: phenylethylhydantoin and the production of fever by paratyphoid vaccine. In properly controlled cases without evidences of existing complications there seems to be no danger from the use of phenylethylhydantoin in the treatment of chorea minor in childhood. Suggestive evidence is appearing that phenylethylhydantoin may be of definite antirheumatic value. Certainly, its effects in shortening the duration of chorea is not solely the effect of the induction of fever. By the use of phenylethylhydantoin and the shortening of the active stage of chorea the incidence of subsequent carditis may be lessened. Phenylethylhydantoin offers a valuable aid in therapy particularly in the more severe cases of chorea, although there is no definite reason why it may not be used in even the mildest cases.

**Xanthomatosis**—Dalitsch states that a review of the previously reported cases of Schüller-Christians disease indicates that dental and oral lesions and jaw bone involvements are frequent and usually early manifestations. They often are the initial complaint and often precede other symptoms by a considerable length of time. The author reports a case of xanthomatosis with the characteristic features of oral lesions, bone defects, diabetes insipidus and proptosis, and having the peculiarities of early marked bone defects in the mandible occurring two years before defects occurred in other bones and an onset at the age of 29. He places emphasis on the advisability of

a thorough study of jaw lesions as a means of identification and early recognition. Schüller-Christians disease should be considered in cases of stomatitis, loosening of the teeth and bone rarefaction of unusual character, and, on the other hand, oral lesions should be looked for in cases showing diabetes insipidus, proptosis and other bone defects, especially those of the skull. Constant pain is also a symptom of the bone disturbance.

**Surgery in Pulmonary Tuberculosis**—Bettman points out that, in pulmonary tuberculosis, thoracoplasty must not of necessity be reserved until medical treatment has failed. Thoracoplasty must not be considered apart from the general sanatorium treatment of tuberculosis. It should be recognized as much a part of a routine treatment in certain instances as artificial pneumothorax, graded exercises, or any other of numerous procedures. The conventional extrapleural thoracoplasty is by no means the only method of treatment. Selective collapse will undoubtedly take an important place in the surgery of tuberculosis. The author believes that the importance of phrenicectomy has been greatly overestimated. There is no such division in the treatment of tuberculosis as medical or surgical treatment. It only happens that at some stages during the treatment the phthisiotherapist is the more active of the medical attendants, at other times the surgeon.

### Journal of Experimental Medicine, New York

57 181 347 (Feb. 1) 1933

- Correlation Between Histologic Changes and Fate of Living Tubercle Bacilli in Organs of Reinfected Rabbits. M. B. Lurie. Philadelphia.—p. 181.  
Effect of Acids and Other Substances in Production of Acute Gastric Ulcers. J. Friedenwald, M. Feldman and S. Morrison. Baltimore.—p. 203.  
Lesions of Nervous System in Vitamin Deficiency. I. Rats on Diet Low in Vitamin A. H. M. Zimmerman. New Haven, Conn.—p. 215.  
Studies on Etiology of Spontaneous Conjunctival Folliculosis of Monkeys. I. Transmission and Filtration Experiments. P. A. Olitsky and J. R. Tyler. New York.—p. 229.  
Biologic Studies of Tubercle Bacillus. II. New Conception of Pathology of Experimental Avian Tuberculosis with Especial Reference to Disease Produced by Dissociated Variants. W. A. Winn and S. A. Petroff. Trudeau. N. Y.—p. 239.  
Further Observations on Use of Pneumococcus Extracts in Effecting Transformation of Type in Vitro. J. L. Alloway. New York.—p. 265.  
Changes in Shape and Size of Bacterium *Coli* and *Bacillus Megatherium* Under Influence of Bacteriophage. Motion Photomicrographic Analysis of Mechanism of Lysis. S. Bayne Jones and L. A. Sandholzer. Rochester. N. Y.—p. 279.  
Studies on Suprarenal Cortex. I. Cortical Suprarenal Insufficiency and Action of Cortical Hormone on Normal and Suprarenalectomized Dog. G. A. Harrop Jr. and A. Weinstein. Baltimore.—p. 305.  
Enhanced Lethal Effects of Roentgen Rays on *Bacillus Coli* in Presence of Inorganic Salts. W. D. Claus. Berkeley. Calif.—p. 335.

### Journal of Thoracic Surgery, St. Louis

2 229 322 (Feb.) 1933

- Experiences with Carcinoma of Esophagus. C. Eggers. New York.—p. 229.  
Eight Years of Selective Collapse for Pulmonary Tuberculosis. F. S. Johns and D. B. Cole. Richmond, Va.—p. 247.  
Surgical Treatment of Carcinoma of Lung. E. D. Churchill. Boston.—p. 254.  
Some Observations on Value of Bronchoscopy in Treatment of Bronchiectasis. D. H. Ballou. Montreal. Canada.—p. 267.  
Closed Intrapleural Pneumolysis in Artificial Pneumothorax Treatment of Pulmonary Tuberculosis. J. H. Forsee. Denver.—p. 270.  
Bilateral Empyema. Report of Eight Cases. C. R. Steinke. Akron, Ohio.—p. 287.  
Inseparability of Endoscopy and Thoracic Surgery. W. A. Hudson. Detroit.—p. 292.  
Constant Positive Pressure Nitrous Oxide Oxygen Anesthesia for Thoracic Surgery. A. H. Miller. Providence. R. I.—p. 296.  
Silver Clip Method of Preventing Hemorrhage While Severing Interpleural Adhesions. Note on Transillumination. N. Bethune. Montreal, Canada.—p. 302.  
Flanged Telescoping Drainage Tube for Empyema Thoracis. C. M. Van Allen. Peiping. China.—p. 307.

**Carcinoma of Esophagus**—Eggers presents seventeen cases of carcinoma of the esophagus, five of which affected the upper end, nine the thoracic portion, and three the cardia. Not one of these was an early case. In the majority, symptoms had existed for more than six months before a correct diagnosis was made. In several patients in whom the diagnosis of cancer was suspected, too much importance was attached to a negative roentgen examination. In all patients in whom symptoms persist, reexamination is urgently indicated. Esophagoscopy with biopsy is the surest way to make a diagnosis. A

negative report should not be accepted as final if the symptoms are suggestive. Unfortunately, there are no real early symptoms. It is usually not until there are symptoms of difficulty in swallowing that the patient complains. All these patients should be examined with every means at one's disposal, especially roentgenography and esophagoscopy. Not until patients are referred for surgical treatment before they have become emaciated, dehydrated and discouraged and with the local disease far advanced will it be possible to achieve substantially better results. An operation for carcinoma of the esophagus will always be a formidable one, even with an early diagnosis and the patient in a fair condition. However, the technical difficulties have been largely mastered, so that the problem looks less difficult than it did some years ago. It was possible to remove the tumor and complete the operation in only thirteen of the author's seventeen cases. Of this group four patients recovered and lived for months; a recovery of almost 32 per cent. There were two recoveries among the five upper esophagus cases, a mortality of 60 per cent, and two recoveries among the five patients in whom a carcinoma of the thoracic portion was resected, likewise a mortality of 60 per cent.

**Intrapleural Pneumolysis in Treatment of Pulmonary Tuberculosis**—Forsee believes that his critical analysis of twenty-eight cases of pulmonary tuberculosis in which thoracoscopic examination and cauterization of suitable adhesions was carried out warrants the following conclusions: 1. Closed intrapleural pneumolysis is often a necessary adjunct to the artificial pneumothorax treatment of pulmonary tuberculosis. 2. Of the twenty-six cases treated by cauterization of pleural adhesion by closed intrapleural pneumolysis 61.5 per cent were favorably influenced in their clinical course. 3. Postoperative complications vary almost directly with the clinical condition of the patient and the type of adhesions cauterized. 4. The electrosurgical method of closed intrapleural pneumolysis decreased the number and severity of operative and postoperative complications by adequate coagulation of the adhesions prior to their severance and by lessening the amount of heat and smoke liberated during cauterization. It is therefore superior to the galvanocautery technic for cutting pleural adhesions.

## Kansas Medical Society Journal, Topeka

34 43 82 (Feb.) 1933

\*Common Vesicular Eruptions of Hands and Feet C. O. West Kansas City—p. 43

Surgery in Treatment of Pulmonary Tuberculosis E. C. Padgett Kansas City Mo.—p. 47

\*Gastro-Intestinal Allergy: Consideration of General and Clinical Features H. J. Rinkel Kansas City Mo.—p. 53

**Vesicular Eruptions of Hands and Feet**—West states that the lesions of dyshidrosis and pompholyx contain fungi, and that they usually appear in the warm months on the non-hairy areas, especially the lateral aspects of the fingers or the palms of the hands and soles of the feet. These lesions are, as a rule, symmetrical and are filled with a clear fluid of a water-like viscosity. The disease occurs in the second and third decades of life. In industrial dermatoses the main irritants are plants, animals or minerals. These lesions present at times a typical series of vesicles, the most common location being the hands. It is important to delve into the patient's occupation. In anaphylactic dermatosis the lesions are usually bilateral and have nearly always a period of vesiculation with periods of regression. The excitant cause is often ingested foods or drugs. The author has observed a vesicular eruption of sudden onset which at first presents a clinical picture of mycotic infection and does not respond to salicylic pastes. The walls of these vesicles are of medium thickness filled with fluid of light viscosity, rupturing rather easily, with a tendency to coalesce. The lesions are quite generalized and negative for fungi and yeast. The sympathetic nervous system evidently plays a part in this type of lesion. The mycotic infections of the hands and feet are intertriginous vesicular and hyperkeratotic. The fungi of the vesicular type can grow indefinitely on bathroom floors, gymnasium floors, locker rooms, club rooms, swimming pools, handles of tools, automobile steering wheels, golf club handles, tennis rackets, baseball gloves or shoes. According to White, 25 per cent of the ringworm eruption on the hands and feet is vesicular. The ringworm vesicles

are deep seated, hard, shotty, with bluish steel colored centers and a lighter periphery, containing a heavy, sticky, viscid fluid, multiform in size, showing varying ages of the vesicles and a more progressive development—a differentiation from other vesicular lesions that give rise to lesions of about the same size. Ringworm has a predilection for the sides and lower tips of the toes and the arch of the foot, leaving the heel and ball free of lesions. In dermatophytid the onset is sudden following an old long-standing tinea of the toes. The essential feature of the sudden attack may be a sensitization of the skin changing its resistance to the mycotic infection or the toxins it produces. Vesicular lesions of nervous origin may be treated with roentgen rays, a bland ointment or wet packs and some sedative. In industrial dermatosis the avoidance of the exciting cause and the free use of water is beneficial. The early application of a bland ointment such as ointment of rose water and hydrous wool fat or a wet pack is advisable. Pompholyx and toxic eruptions respond to a mild symptomatic individualized treatment of equal parts of tannic and boric acid, 1 drachm to a pint of water used as a wet pack. A dilute potassium permanganate or aluminum acetate and boric acid pack is also helpful. There is no panacea for the treatment of fungous infection. The roentgen ray is the most useful combatant yet found to attack fungous infection, particularly when assisted by Whitfield's ointment full strength, or modified either in strength or by the addition of essential oils. Mercurochrome is of little value as a fungicide. The use of salicylic acid mixtures as a panacea in vesicular lesions should be guarded.

**Gastro-Intestinal Allergy**—According to Rinkel, gastro-intestinal allergy includes only the primary lesions induced by the allergic reaction. These changes predispose to secondary pathologic lesions of great importance. The exciting reaction may be inside or outside the enteric tract and may be induced by one or several forms of hypersensitiveness, atopy being the most common. Digestive tract symptoms due to allergy mimic other gastro-intestinal diseases and are rarely present as a distinct clinical entity. Lesions may occur at any level of the tract. They may be induced by a single ingestion or by the cumulative or combined effect of a food or foods. Food is the commonest cause of enteric tract allergy and is more frequent in children than in the adult. A gastro-intestinal study should incorporate details concerning the family and past history of allergy as well as an evaluation of signs indicative of sensitization in the patient. Interpretation of food distress is to be made with care since there are many types. The differentiation of acute abdominal conditions is to be made with caution, the error being toward an infectious lesion with surgery rather than that of allergy and delay. Skin testing is to be done along with other laboratory procedures, never alone. In every instance, clinical trial is the means of specific diagnosis. The direct or differential diagnosis is not difficult if one will consider the probability of allergy in atypical acute and every chronic abdominal condition. Treatment should be aided by general medicinal and hygienic measures. The inability to maintain health and avoid exciting foods may complicate treatment.

## Laryngoscope, St. Louis

43: 81 152 (Feb.) 1933

History of Thyrotomy and Laryngectomy D. B. Delavan New York—p. 81

Outstanding Points in Laryngectomy as Developed by Mackenty and Some of the Other Ideas Relating to This Operation F. O. Lewis Philadelphia—p. 97

Atresia of Pharynx and Other Plastic Operations Developed by Dr. Mackenty E. R. Faulkner New York—p. 103

Diagnosis of Early Cancer of Larynx C. G. Coakley New York—p. 106

Cancer Problem as Related to Laryngology H. S. Martland Newark N. J.—p. 110

Cholesteatoma S. J. Kopetzky New York—p. 118

\*Primary Jugular Bulb Thrombosis with Metastasis: Operation Recovery S. Mahis Los Angeles—p. 132

New Tonsil Knife and Enucleator S. P. Schechter New York—p. 138

**Primary Jugular Bulb Thrombosis**—Mahis concludes, from a study of a case of primary jugular bulb thrombosis, that 1. The great problem in sinus thrombosis is not so much the etiology or the operative technic but the early recognition of the infection of the sinus, as the danger increases with each day. 2. A metastatic phenomenon with sepsis may act as an aid in the diagnosis and at the same time be mis-

leading, for the patient may have a hematogenous septic arthritis from a middle ear infection which would account for septic temperature, chills and positive blood culture, without sinus involvement. 3 The time element and the patient's condition at the time of the operation are important factors in guiding one as to what and how much to do. 4 Arthritic metastases following otogenous general sepsis are not immediately to be feared and are least dangerous from a prognostic point of view. McDaniel reported a case of jugular bulb thrombosis complicated by several arthritic purulent infections with complete recovery following incision and drainage of more than 500 cc. of pus from the right thigh.

### Maine Medical Journal, Portland

24:21-38 (Feb.) 1933

- Results of Treatment in Small Group of Patients with Thyroid Disease. I. M. Webber, Portland.—p. 24  
Few Facts Concerning Knee Joint Surgery. R. O. Meisenbach, Portland.—p. 28  
Unusual Result in Urology. C. N. Peters, Portland.—p. 34

### Medical Annals of District of Columbia, Washington

2:23-46 (Feb.) 1933

- Simplified Diets for Diabetic Patients. F. N. Allan, Boston, and Sister Mary Victor, Rochester, Minn.—p. 23  
Value and Indications of Intravenous Injections in Surgery. J. H. Lyons, Washington.—p. 32  
Effect of Certain Relaxants on Uterus During Labor. Supplementary External Hysterographic Study. S. M. Dodek, Washington.—p. 35  
Congenital Hypertrophic Pyloric Stenosis. Report of Cases. E. A. Cafritz, Washington.—p. 38

**Effect of Relaxants During Labor.**—Dodek calls attention to an original method and apparatus previously presented for external hysterography during labor. References have been made to the experimental work of other observers with the action of epinephrine solutions on the uterus of the human female and of laboratory animals. External hysterograms reveal that solutions of epinephrine in 1:1,000 dilution and in doses of from 3 to 15 minims (0.2 to 1 cc.) inhibit completely the contractions of the human uterus in labor for periods varying from four to sixteen minutes. The inhibitory effect of epinephrine on the contractions of the parturient human uterus is of value in obstetric practice, to relax a contraction ring or a tonic uterus with the help of general anesthesia when these conditions interfere with safe operative termination of the second stage of labor vaginally. The rapid antagonistic action of epinephrine to pituitary extracts should be kept in mind in cases of the inadvised use of the latter during first or second stage labor. Despite the analogous properties of ephedrine and epinephrine, the former does not have an inhibitory action on the contractions of the human uterus in situ.

### Medical Journal and Record, New York

137:133-176 (Feb. 15) 1933

- Asthma Cholesteropriva. Its Successful Treatment with Irradiated Lanolin Inunctions. L. Berman, New York.—p. 133  
Pneumonia in Children. I. e. Grand Kerr, Brooklyn.—p. 138  
Milk Sugar in Treatment of Intestinal Toxemia with Especial Reference to Constipation. E. Boros, New York.—p. 140  
Reticulo-Endothelial System. Its Significance in Surgical Conditions. J. K. Narat, Chicago.—p. 144

### New England Journal of Medicine, Boston

208:293-350 (Feb. 9) 1933

- Spontaneous Hyperinsulinism. Report of Case of Hyperinsulinism Cured by Surgical Intervention. C. L. Denck, F. C. Newton, and R. Z. Schulz, Boston; M. A. Bowie, Philadelphia, and N. A. Pokorny, Boston.—p. 293  
Role of Infection in Burns. Theory and Treatment, with Especial Reference to Gentian Violet. R. H. Aldrich, Boston.—p. 299  
Lead Treatment of Cancer. J. C. Aub and R. H. Smithwick, Boston.—p. 310  
Antirachitic Potency of Milk of Human Mothers Fed Previously on Vitamin D Milk of the Cow. J. W. M. Bunker and R. S. Harris, Cambridge, Mass., and R. S. Eustis, Boston.—p. 313  
Method for Mounting Gross Specimens. S. Warren, Boston.—p. 315  
Relation of Smallpox Morbidity to Vaccination Laws. S. B. Woodward, Worcester, Mass., and R. F. Feemster, Boston.—p. 317  
Persistently Positive Blood Reactions in Treated Syphilis. W. D. Wheeler, Boston.—p. 319  
Nontuberculous Pulmonary Suppuration. E. D. Churchill, Boston.—p. 323

**Infection in Burns.**—Aldrich observed, through bacteriologic studies on a series of burned patients that the beta-hemolytic or gamma streptococcus was the invading organism

in all extensive burns. When a surface of the body is burned there are no marked constitutional changes if the burns are kept free of infection. Gentian violet is highly bactericidal against the gram-positive organisms. Gentian violet is a coagulant and an analgesic agent in burns; there is no loss of fluid from the burned area which is sealed under the eschar. Invasion by contaminating organisms is kept down to a minimum. The patient is practically free from pain. In third degree burns there are many small islands of epithelium in the hair follicles that will spread under the scaffolding of the eschar when infection is kept down hence diminishing the necessity for skin grafting. The author reports a few typical cases. One patient presenting a third degree burn of three fifths of the body area lived eighty-four days and showed at necropsy none of the changes that are supposed to be associated with burns. In the treatment of burns with gentian violet when a patient is admitted with a fresh burn unless it is covered with oils or grease there is no need to do any preliminary cleaning, the dye in a 1 per cent solution being sprayed on the burned area immediately. The usual procedures to combat any existing shock are carried out. The patient is so placed that the burned area is uppermost. The burn is not covered with a dressing. The bedclothes are supported by a cradle in which a light bulb is placed to keep the patient warm. The temperature under the cradle is maintained between 84 and 88 F, this being the temperature found to be most comfortable for the patient. For the first few hours gentian violet is sprayed on the burned areas every two hours. A light eschar is formed rapidly, the wet oozing areas becoming dry and tough. The burn is thereby sealed sterily under an impermeable cover. By the time the preliminary sedative has worn off pain has ceased. After the eschar has formed the patient is sprayed every four to six hours during the day. Any blebs that have formed are opened and the unstained portions are sprayed. This treatment continues until healing is complete. If the burn is so deep and so extensive that skin grafting is going to be necessary the eschar is allowed to remain on for about three weeks, after which time it can be softened and removed by warm compresses of sterile salt solution. By that time the granulations have built up enough to graft and being sterile, they accept new skin readily. If a patient presents himself with an old burn already septic the treatment can also be instigated with no initial clean up. The necrotic matter and pus are likewise converted into an eschar but this eschar differs from that of a fresh burn by being irregular in pieces and floating. This eschar is usually removed every day and the area sprayed immediately afterward. Otherwise the treatment is the same as that described for fresh burns. The general care of the patient is of prime importance. This includes forcing of fluids and a high vitamin and high caloric diet.

**Lead Treatment of Cancer.**—Aub and Smithwick report the results of treatment of twelve cases of cancer of the breast by a combination of intravenous injections of lead orthophosphate followed by high voltage roentgen therapy. Intravenous lead treatment as given to these patients did not seem to exert any depressor effect on the rate of growth of tumor cells. The addition of varying degrees of lead poisoning with the accompanying secondary anemia to the already existing disease probably made the duration of life of these patients shorter than it would have been with roentgen treatment alone. It was difficult to control adequately the symptoms of lead poisoning by diet and calcium chloride alone. Morphine was frequently necessary to relieve the intense pain of lead colic. In spite of metastases to the bones, the calcium excretion of four of these patients averaged only slightly higher than that found in normal control subjects. This calcium excretion was not influenced either by roentgen treatment or by the injections of large amounts of lead. The lead that was injected averaged 473 mg. in six of the patients. An average of only 69 mg. of lead was recovered in the excreta in the next forty-six days, so that approximately 400 mg. was retained in the body.

**Antirachitic Potency of Milk of Mothers Fed Vitamin D Milk.**—According to Bunker and his associates, breast milk from mothers who have not previously been fed antirachitic supplements to a mixed diet does not heal rickets in rats when each animal is fed 20 cc. of milk daily for eight days. Breast milk from mothers who daily received 24 ounces of vitamin D milk for two weeks as an antirachitic supplement to an other-

wise adequate diet is found to contain antirachitic potency equivalent to 1 rat unit in 136 cc of breast milk (17 cc. daily per rat for eight days). Two out of eight animals showed little or no healing. This breast milk when fed at the rate of 15 cc daily per rat for eight days (120 cc total) shows definite increase of antirachitic potency over breast milk that has not been built up by a supplement of vitamin D milk. When fed at the rate of 20 cc daily per rat for eight days, the 160 cc. total fed per animal shows well over the equivalent of 1 rat unit. The antirachitic potency of human breast milk can be augmented in a simple and acceptable manner by including vitamin D milk in the diet of the mother, during lactation.

**Positive Blood Reactions in Treated Syphilis**—Wheeler studied 200 patients with persistently positive serum reactions. Only 8 of the 200 patients presented neither lesions nor symptoms. A large majority (147) of the patients started treatment from two to forty years after the date of infection. Seventy patients had irregular or insufficient treatment particularly lacking in arsenicals, these patients demonstrated that untreated or insufficiently treated syphilis is a serious menace causing grave damage to the nervous, vascular and visceral systems. Although modern treatment is not finally ideal and has certain disadvantages, it is nevertheless of essential value until further progress is made. It is reasonable to suppose from the observations made in this study that organic syphilitic involvement is in most instances the cause of persistently positive serum reactions, and that such reactions usually mean uncured syphilis.

### New Jersey Medical Society Journal, Orange

30 123 196 (Feb.) 1933

- Plastic Surgery of the Nose L. A. Peer Newark—p. 123
- \*Diathermy in Treatment of Chronic Deafness New Technic. D. M. Yazujian Trenton—p. 130
- Exophthalmos Its Relation to Neoplasm and Nasal Accessory Sinus Disease. W. G. Mengel Camden—p. 132
- \*Jaundice in Infancy W. B. Stewart, Atlantic City—p. 138
- Problems for the Doctor F. I. Krauss Chatham—p. 143
- As the Doctor Sees His Profession E. G. Hummel Camden—p. 146
- Vincent's Angina. H. V. Hubbard Plainfield—p. 149
- Primary Carcinoma of Lung in a Fourteen Year Old Boy R. A. Kilduffe and S. L. Salasin Atlantic City—p. 152

**Diathermy in Treatment of Chronic Deafness**—Yazujian treated four patients suffering from advanced catarrhal deafness and one from moderate nerve deafness, perhaps a sequel of erysipelas. All obtained satisfactory hearing from this treatment. He has also used diathermy in ordinary chronic conditions, combining it with the routine treatment and believes that it expedites the recovery of hearing. The patient should be seated in a comfortable chair and assured that there will be no pain, shock or any discomfort during the treatment. An 8 per cent solution of cocaine should be applied once to the nasal mucous membrane as far as the posterior choana. While the cocaine is taking effect, cotton should be wound on the triangular ends of the nose and ear electrodes so as to form a cylinder, and care should be taken that the points of the electrodes are well covered to a thickness of about 25 per cent more than their insulation. The cotton-covered electrode tips are then dipped in physiologic solution of sodium chloride, the excess fluid being gently squeezed out. The ear electrodes are placed in their holders and the operator, stretching apart the two ends of the head band which holds the ear pieces, introduces a tip into each meatus and brings the holders in alignment with the meatal passages horizontally. The latter are then gently pushed in toward the drums two thirds of the depth of the canals, but under no circumstances allowed to touch the drums. Next, the nasal electrodes are introduced in contact with the floor of the nose and until the posterior pharyngeal wall is reached. Over the outside ends of the aural and nasal electrodes are slipped the tubal ends of their respective cords. The dials on the current reducer are set at maximum and then one of the gaps of the diathermy machine is opened slowly until the spark is just visible. In a few seconds the patient will begin to feel heat in the ears. It should be explained that gentle heat is desired and that, if the heat becomes intense, he must immediately tell the operator. If one ear feels too hot, the reducer on that side should be retarded, if both ears get too hot, the gap should be narrowed. While the current required is from 30 to 60 milliamperes, meters should not be depended on because only a few are sen-

sitive enough to record such a small current correctly. The treatment lasts from fifteen to twenty minutes with the patient feeling comfortably warm in the ears. Immediately following diathermy treatment, pneumatic massage may be given.

**Jaundice in Infancy**—From a review of the literature, Stewart concludes that icterus neonatorum develops in about one third of all new-born infants on the second to the fifth day of life, and persists seldom longer than ten days. If it is present at birth appears after the first week, or persists beyond the second week, other causes must be considered. Of these, infection is the most important. Fever, although not always present, jaundice of deepening intensity, indications of infection at the umbilicus, and the toxic appearance of the infant may be additional points of evidence for infection. Jaundice as a symptom of sepsis has been too frequently overlooked. A history of the death of jaundiced siblings soon after birth leads one to suspect familial jaundice of the new-born now known as erythroblastosis. The jaundice of congenital hemolytic icterus is never intense and may appear at or shortly after birth. There is a hereditary history and an increased fragility of the erythrocytes. An obstructive jaundice, with urine which stains the diapers and stools of the clay colored variety, indicates either congenital obstruction of the bile ducts or catarrhal jaundice. The latter is accompanied by fever and vomiting and will clear up within one or two weeks, the former is progressive. In cirrhosis of the liver, jaundice develops during the later stages of the process and is accompanied by the usual symptoms. Biliary calculi in children are extremely rare. Syphilis, although usually mentioned, is seldom the cause of jaundice.

### New Orleans Medical and Surgical Journal

85: 571 644 (Feb.) 1933

- Personal Contribution to Treatment of Some Fractures as Result of Long Years of Study and Research E. D. Martin New Orleans—p. 571
- Allergy E. H. Jones Vicksburg Miss—p. 578
- Allergic Asthma J. C. Pegues Greenville Miss—p. 580
- Allergic Reaction by Remote Control N. F. Thiberge New Orleans—p. 585
- Some Common Conditions of Upper Urinary Tract. J. A. K. Birchett Jr. Vicksburg Miss—p. 587
- Acute Osteomyelitis Treatment and Importance of Early Diagnosis. R. D. Kirk Jr. Tupelo Miss—p. 593
- II. Rate of Absorption from Extensive Superficial Burns R. Kapsinow Lafayette, La—p. 597
- Refraction Patient W. A. Stevens Gulfport Miss—p. 599
- What the Layman Should Know About Cancer H. Shane Marshall Texas—p. 604
- Chinese Medicine. R. B. Price, Taichow Ku China—p. 606

### Northwest Medicine, Seattle

32 45 86 (Feb.) 1933

- Chronic Arthritis Classification and Treatment J. L. Miller Chicago—p. 45
- Prevention Diagnosis and Treatment of Cancer of Cervix. T. E. Jones Cleveland—p. 53
- \*Induction of Labor A. Mathieu Portland Ore.—p. 59
- Double Uterus with Unusual Pathology C. T. Sweeney Medford Ore.—p. 63
- Rectal Hemorrhoids Anatomic and Surgical Study W. H. Buermann Portland Ore.—p. 64
- Etiology and Treatment of Migraine. L. D. Inskeep Medford Ore.—p. 67
- Shall We Prescribe Liquor? F. L. Wood Lynden Wash—p. 68
- Relations of County Medical Society to Public. A. M. Webster Portland Ore.—p. 72
- Declaration of Medical Independence. A. H. Peacock Seattle—p. 75

**Induction of Labor**—Mathieu used, in a series of 406 cases in private practice, the castor oil and pituitary extract method of induction of labor. It was successful in 96.8 per cent of the cases. Induction caused no increase in the maternal or fetal mortality or morbidity. Induction was most successful when the head was engaged and the cervix effaced. In the last 206 inductions quinine was not used, and the results were apparently not affected by its omission. In his series of 406 cases there appeared to be no basis for the fear some hold that the use of pituitary extract in the induction of labor causes separation of the placenta. In this number of cases which on close analysis seem to include most of those that promise trouble (the toxemias, eclampsias, large babies, contracted pelvic outlets), the maternal morbidity and the fetal mortality were surprisingly low, in fact, it appears to the author that in his series the induction saved much maternal morbidity and several fetal lives.

## Occupational Therapy and Rehabilitation, Baltimore

12 172 (Feb.) 1933

- Shall We Apply Industrial Psychiatry to Psychiatry? L. C. Marsh Kings Park N Y—p 1
- Occupational Therapy at the James Whitcomb Riley Hospital G Garceau Indianapolis.—p 15
- Relationship of Junior League of Riley Hospital Indianapolis Ind to Occupational Therapy as Used on Children of Riley Hospital Mrs Eugene Miller—p 21
- Work of the Occupational Therapist with Children Winifred Conrick—p 25
- Value of Curative Workshops in Rehabilitation of Physically Handicapped Persons L. S. Wood Rochester N Y—p 31
- Why Occupational Therapy in Military Hospitals? H M Nicholson Washington D C.—p 37
- Memorandum on Organization and Development of Occupational Therapy Department at the Psychiatric Hospital of Puerto Rico L. M. Morales Rio Piedras Puerto Rico—p 43
- Landscape Gardening and Floriculture as Occupational Therapy Treatment. Dessu M Hartwell—p 47
- Occupational Treatment at Crippled Children's School Toronto Jean Hampson Toronto, Canada—p 55

## Ohio State Medical Journal, Columbus

29:73 144 (Feb 1) 1933

- Vaccine Therapy S. E. Dorst, Cincinnati—p 93
- Survey of One Thousand Two Hundred and Fifty Three Consecutive Deliveries C. T. Hemmings, Cleveland—p 97
- Pathologic States of the Nervous System and the Eye A. R. Von derahe Cincinnati—p 105
- \*Occupational Skin Diseases—Dermatologic Hints for Their Elimination K. G. Zwick, Cincinnati—p 111
- Preventive Medicine and Periodic Health Examinations. V. C. Rowland, Cleveland—p 117

**Occupational Skin Diseases**—Zwick states that as occupational skin diseases have always been present and as the incidence of industrial skin diseases continues high, despite the introduction of labor saving machines which reduce the frequency of contact with harmful substances additional prophylactic measures seem necessary besides those suggested by McConnell, White, and others which retain their usefulness. A cutaneous tolerance test may be useful to detect eczematogenic substances and to detect an eczematous predisposition (sensitivity, idiosyncrasy) in applicants for work. The cutaneous tolerance test is suggested as an additional measure for determining the fitness of an individual for a specific job, besides the customary routine physical examination of the body in general and of the skin in particular. Since 5 per cent of all persons are known to have a congenital defect (idiosyncrasy) of the skin which predisposes to eczema, and since a larger percentage of individuals, on account of their acquired state of allergy (hypersensitivity) have a tendency to eczema, it is the author's idea that the fitness of the largest organ of the body should be investigated more frequently.

## Pennsylvania Medical Journal, Harrisburg

36:305 390 (Feb.) 1933

- Diseases of Peripheral Arteries Classification, Diagnosis and Treatment G. E. Brown Rochester Minn.—p 305
- Blood Stream Infection E. W. Willetts, Pittsburgh.—p 312
- Present Status of Oxygen Treatment in Pneumonia. J. R. McCurdy Pittsburgh—p 317
- Nonobstructive Retention of Urine. L. Herman and L. B. Greene Philadelphia.—p 319
- Otogenous Brain Abscess. G. B. Jobson, Franklin—p 322
- \*Complications and Sequelae of Meningococcal Meningitis During Infancy and Childhood H. A. Slesinger, Windber—p 327

**Meningococcal Meningitis**—Slesinger observed a series of forty-two cases of meningococcal meningitis for periods of from six months to four and a half years following the acute illness. Of these cases, 64.4 per cent showed no postmeningococcal sequelae at the end of the period of observation, and 35.6 per cent showed residual sequelae. The most common complications were hydrocephalus and deafness. The most common residual sequelae were deafness and speech defects. In general, postmeningitic patients showed good physical and mental development. The prognosis of meningococcal meningitis depends considerably on the type of organism that predominates during a given epidemic.

## Public Health Reports, Washington, D C

48 163 181 (Feb. 17) 1933

- Relation Between Trypanocidal and Spirocheticidal Activities of Neosarsphenamine III Uniformity of Effect of Different Types of Neosarsphenamine on Serologic Reactions in Human Syphilis M. Buchholtz and T. F. Proby—p 166

## Surgery, Gynecology and Obstetrics, Chicago

56 257 590 (Feb 15) 1933

- Pillars of Surgery W. I. de C. Wheeler Dublin Ireland.—p 257
- \*Experimental and Clinical Study of Use of Radium in Brain L. Davis and M. Cutler, Chicago.—p 280
- \*Some Principles Involved in Pathology and Treatment of Empyema Thoracis With Particular Reference to Treatment by Periodic Aspiration or Evacuation With Air Replacement Without Drainage. J. A. Danna, New Orleans.—p 294
- Inflammation G. L. Cheate London England.—p 310
- \*Detection of Clinically Latent Cancer of Cervix Report on Schiller's Lugol Test W. P. Graves Boston.—p 317
- Results of Radium Treatment in Functional Uterine Bleeding F. E. Keene and F. L. Payne, Philadelphia.—p 322
- Medicine and Surgery in Industry F. A. Besley Waukegan Ill.—p 330
- Fractures and Dislocations in Region of Elbow P. D. Wilson Boston—p 335
- Appendicitis Some Observations Based on Review of Three Thousand Nine Hundred and Thirteen Operative Cases. J. M. T. Finney Jr Baltimore.—p 360
- Hopeful Prognosis in Cases of Carcinoma of Colon. F. W. Rankin and P. F. Olson Rochester Minn.—p 366
- \*Diverticulosis and Diverticulitis with Particular Reference to Development of Diverticula of Colon V. C. David Chicago.—p 375
- History and Development of Surgical Treatment of Facial Palsy A. B. Duell, New York.—p 382

**Use of Radium in Brain**—In trying to determine the value of radium in the treatment of intracranial tumors, Davis and Cutler experimented on ten cats, nine dogs and one monkey. They used platinum iridium needles with walls 0.5 mm thick, 22 mm long, which contained 1 mg of radium element, for implantation. The pathologic changes consisted of a central zone of destruction immediately in the tract of the needle wound. In the brains of those animals killed at the end of the period of exposure, gitter cells loaded with fat, thickening of the blood vessel endothelium with thrombosis of smaller vessels, amyelinization, and slight chromatolytic changes in the nerve cells were the prominent features. In the brains of those animals in which some reparative processes had time to occur the gitter cells had disappeared, astrocytes and oligodendroglia cells were present in large numbers, and neuronophagia was found. The important fact to be recognized is that these pathologic changes gradually faded away to the normal within the radius of a centimeter from the central zone of destruction. The authors' clinical experience in the use of radium needles implanted within the brain is limited to one case. They first tried to determine whether or not the use of radium element implanted in the brain would produce damage to the surrounding normal brain structure. They used multiple weak radium foci adequately filtered and uniformly distributed. The radium element was distributed throughout the platinum needles in such amounts that the total dose determined by clinical experience is delivered over a prolonged period of approximately five to seven days. When it appeared that irreparable damage did not occur, the authors felt justified in using it in an intracranial glioma. They believe that the case they report was a severe test of the practicability of its use and that its future employment in these extensive gliomas should not be discouraged by the fatal result in this patient.

**Treatment of Empyema**—Danna discusses the three methods of treatment of empyema that are now in vogue: (1) incision and open drainage with or without rib resection and with or without irrigation of the cavity, (2) closed tube drainage and (3) aspiration. He also discusses a method of periodic aspiration or evacuation of the pus, with air replacement and without drainage. This method removes the pus and produces the same condition that results after tube or any other drainage, that is, a clean cavity filled with air. The cavity is sealed, there is no strain on its walls and the more air present the longer it takes for absorption and the more time the endothelial surface has to return to normal. It is not necessary, therefore, to presuppose that there should be any deviation from the normal process of healing in order to bring about a cure by this method. The advantages of periodic evacuation and air replacement are that it can be used as a preliminary to any other method without harm. It can be used when other methods have failed. It leaves no scar or deformity, especially if a small stab is done before introducing a large needle. The patient is not constantly bathed in pus, is not encumbered with apparatus, and is up and about most of the time. There is less danger of metastatic abscess. The cost of many dressings is saved. There is the least probability of chronic empyema, least

trauma and the greatest probability of minimum residual pleural adhesions. With proper precaution it should be safer and result in a lower mortality than any other method. It is especially valuable in the presence of pulmonary tuberculosis. It lends itself admirably to rendering safer all operative procedures within or through the pleural cavity. The disadvantages of the method are that it should not be used in sudden overwhelming infection of the pleura by ruptured abscess. There is the danger of tension pneumothorax. Chest wall infection is possible. During the intervals between treatments, a certain amount of pus is present giving fever, malaise and so on. This is usually evident only one or two days before the next treatment. It requires a more frequent contact of the surgeon with the patient and more frequent reexamination and roentgenograms.

**Cancer of Cervix.**—Graves cites Schiller's conclusions that cancer of the cervix starts in the squamous epithelium of the portio near the os and at first spreads laterally, i. e., superficially, it always starts in the unbroken epithelium and not in an ulceration, and histologically the chief determining points of diagnosis are first the oblique line of demarcation between the normal and abnormal areas and, second, the anaplastic atypia and polymorphism of the abnormal cells. In order to discover the location of a process not distinguishable by eye or touch Schiller devised an ingenious test which bids fair to be of general clinical value. The test is based on the discovery by Lahm that the upper layers of the normal epithelium of the portio and vagina contain rich masses of glycogen, which disappear when the epithelium becomes cornified or changed by cancer. In the normal living tissue the glycogen of the upper layers of cells is stained in a few seconds a deep mahogany brown by compound solution of iodine. A superficial area of early cancer being devoid of glycogen does not take the stain and stands out startlingly white or pink against the deeply colored almost black background of the normal tissue. The test is specific for determining the absence of cancer of the portio and vagina. The several conditions that obscure the test are that the stain does not take on glandular epithelium like that of the endocervix, ulcerations and erosions do not take the stain, since they have no epithelial covering; in areas of chronic cervicitis the epithelium seems often to be deficient in glycogen taking a light brown stain which blends with the surrounding deeply staining tissue instead of being sharply defined from it as in cases of true cancer, the normal stain is prevented or obscured by slight trauma such as that from tenacula or scrubbing with gauze; the cervix and vagina of the hypoplastic and atrophic individual stains lighter than the normal, pus stains black, since leukocytes are rich in glycogen, hyperkeratosis prevents the stain as in leukoplakia, syphilis and exposed areas in prolapse; the test is of limited value in diagnosing advanced cancer, since the superficial assimilation stage is usually lost in the melee of self-reproducing cells, and Schiller's test is specific for cervical cancer and is not adapted to other superficial cancers such as those of the vulva and skin in other parts of the body. The author's technic is as follows: A thick swab of absorbent cotton and gauze is prepared on the end of a stout wooden applicator. The swab is immersed in the compound solution of iodine until a copious amount of it has been absorbed. With the upper vagina well exposed by speculum or retractors, the swab is then pressed firmly against the anterior lip of the cervix. The upper vagina is in this way flooded with the solution, which instantaneously stains the normal tissues (excepting the mucous membrane of the endocervix) almost black. Any area of the portio, no matter how small, that does not take the stain must be regarded as suggestive of cancer. The suggestive area is then curetted with a specially sharpened spoon curet. The strip of epidermis thus secured is placed immediately in hardening solution and sent to the laboratory for biopsy.

**Diverticulosis and Diverticulitis.**—David states that the large intestine is probably more frequently the seat of diverticula than is any other structure in the body. The two principal etiologic factors seem to be age and constipation. Adiposity has been mentioned as a predisposing factor but diverticulosis of the colon has been observed in many thin patients. The author has studied histologically a number of sigmoid colons containing small diverticula without inflammation, as well as the colons of aged subjects in whom no clinical

suggestion of diverticulosis existed. He observed at necropsy that the normal sacculations of the sigmoid colon of old people are markedly developed and that small round balls of fecal material can often be expressed from them. The sections of such intestine taken between the tinea opposite the mesenteric border frequently show microscopic diverticula, which do not follow the vessels through the muscularis and consist of herniations of the mucosa and submucosal muscularis and fibrous tissue through the circular muscle. These diverticula show no evidence of inflammatory reaction about them and from the outside of the intestine their presence could not be suspected except in a few instances in which small fecaliths may be seen as dark spots in the subserosal fat. It appears then that, in the aged conditions exist in the muscularis which allow an easy herniation of the mucosa and submucosa. This hernia goes between circular bundles and is at first surrounded by them. After it has completely penetrated the muscularis, the periphery of the sac is covered by mucosa and submucosa consisting of the muscularis, mucosa and fibrous tissue, and over this the subserous fat. As the diverticulum increases in size it commonly insinuates itself into the base of an appendix epiploica, where the body of the sac enlarges into a globular structure and commonly contains dry fecal material or a real fecal concretion. The neck of the sac is small as it penetrates the muscularis, and the opening into the intestine may be difficult to see. During this whole stage of development no evidence of inflammation may be present on histologic study though it is logical to assume that ideal situations exist for inflammation in the body of the sac, which has a narrow opening into the intestine and may be easily occluded.

### Tennessee State Medical Assn. Journal, Nashville

26 47 92 (Feb.) 1933

- Graphic Art and Its Application to the Teaching of Medicine. Animated Film. H. C. Schmeisser, J. V. Callagione and J. L. Scianni. Memphis—p. 47.
- Value of Hormone Test (Aschheim-Zondek Test Modified) for Pregnancy. In Gynecology. W. T. Black. Memphis—p. 50.
- Hydatidiform Disease with Especial Reference to Echinococcus Cyst of Liver. C. M. Miller. Nashville—p. 54.
- Childhood Tuberculosis. W. L. Rucks. Memphis—p. 58.
- Cooperative Versus Full Time Paid Health Department with Comparison. J. S. Freeman. Springfield—p. 63.
- \*Urine Test for Pregnancy. Report of Two Hundred Cases. H. Litterer. Nashville—p. 67.
- Conservative Treatment of Eclampsia with Indications for Surgical Intervention. J. R. Reinberger and P. C. Schreier. Memphis—p. 71.
- Idiopathic Narcolepsy. Case Report. H. B. Gotten. Memphis—p. 75.

**Urine Test for Pregnancy.**—Litterer believes that a reliable and practical test for the determination of early pregnancy is offered by Friedman's modification of the Aschheim-Zondek technic. The time factor has been cut to a twenty-four or a forty-eight hour period, with an error variously estimated between 1 and 3 per cent in the author's series of 200 cases; the incidence of error was 2 per cent. Only one rabbit is required in the test. This test finds its real application and value in normal pregnancies. It is subject to an error of from 20 to 50 per cent in abnormal pregnancies. The greatest factor which must be reckoned with in the test is the selection of a rabbit that is more than 8 months of age, weighs at least 6½ pounds (3 Kg.), is unmated, and has been isolated for a period of three weeks or more. Any departure from this rule will invariably lead to disappointing results. Friedman's test when care is taken in the selection of an animal meeting all requirements, is destined to replace other more complicated methods and become established as the test of choice. This test combines simplicity of technic, ease of interpretation of results, low percentages of error and rapidity of performance. The test is as follows: The urine is filtered and preserved with tricresol, then iced. Intravenous injections of this urine are given in the marginal vein of the rabbit's ear. Three injections of from 4 to 5 cc. each are made at intervals of four hours on two consecutive days. Each dose is warmed before injection, as this reduces the possibility of shock to the animal. Forty-eight hours from the time the first injection is given, the rabbit is anesthetized and opened for inspection of the ovaries. A positive test is unmistakable, showing one or more large bulging, shiny, freshly formed corpora hemorrhagica on the surface of one or both ovaries. A negative test consists of several flattened, pinkish or clear cysts appearing partly shrunken and small.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## Archives of Disease in Childhood, London

8 1-83 (Feb.) 1933

- \*Etiology and Treatment of Pink Disease. J V Braithwaite—p 1  
Nonprotein Nitrogen of Blood in Health and in Hepatic Disease Margaret T Tindal—p 17  
Atelectatic Bronchiectasis in Childhood R W B Ellis—p 25  
\*Ketogenic Diet in Treatment of Pyuria in Childhood J B Rennie—p 47  
Papilloma of Choroid Plexus Case. Anne E. Somerford—p 53  
\*Hemolytic Streptococcus as Factor in Causation of Acute Rheumatism. H J Gibson W A R Thomson and D Stewart—p 57  
Renal Rickets Following Acquired Nephritis V H Ellis—p 73  
\*Review of Use of Immune Serum in Acute Poliomyelitis J M Smellie—p 75

**Pink Disease**—Braithwaite states that pink disease is due to an abnormal reaction to daylight in an infected child. It is cured by keeping the child protected from daylight. The cardinal symptoms of the disease are erythredema, a polymorphic rash followed by desquamation, marked anorexia, muscular hypotonia, mental depression, photophobia and sweating. The disease occurs in children following or during an acute infection. It occurs chiefly among well cared for children in good surroundings. Twenty of the twenty-seven cases came from country or suburban homes. It was first described in Australia and has been reported from New Zealand, America and Switzerland. Only four of the present series of cases were admitted during the winter months. The blood calcium is usually raised. Erythrocytosis as well as leukocytosis is extremely common in this disease. There is also often an increase in the amount of hemoglobin. The sedimentation rate may be greatly increased. Intravenous or intraperitoneal injection of sodium citrate usually causes a marked temporary improvement. Keeping the children in light from which the rays of the violet end of the spectrum have been filtered by means of ruby glass causes a rapid and lasting improvement in the condition. In one case exposure to sunlight produced symptoms of collapse.

**Treatment of Pyuria**—Rennie treated six cases of chronic pyogenic infection of the urinary tract with the ketogenic diet. At the end of the treatment four patients presented sterile urine, and growth on culture was scanty in a fifth but three relapsed within three weeks. The sixth patient showed no change. In the two patients who were permanently cured the duration of the disease was short and no abnormality of the urinary tract was observed. In each of the four in whom treatment failed abnormality of the urinary tract was demonstrated by pyelography. It would appear that the ketogenic diet is of little value as a curative agent in pyuria associated with abnormality of the urinary tract.

**Hemolytic Streptococcus in Acute Rheumatism**—Gibson and his associates ascertained the intradermal reactions to extract preparations of streptococci of different types. Strongly positive reactions to extract of hemolytic streptococcus are more common in rheumatic than in control cases. Reactions to viridans and gamma streptococcus extracts show no significant difference as between rheumatic and control series. There is, however, some evidence that the incidence of reactions to extracts of nonhemolytic streptococci is associated with the degree of sensitivity to antigens of hemolytic strains. The Dick reaction was positive in 16 per cent of the authors' 140 rheumatic cases as compared with 28 per cent of 145 controls. Hemolytic streptococci were isolated from the throats in 43 per cent of the rheumatic cases as compared with 20 per cent of the controls. In neither the rheumatic nor the control groups could any significant differences in skin reactivity be made out between those patients who harbored the micro-organisms and those who did not. The highest proportion of positive skin reactions to the extract of hemolytic streptococcus was found in cases of chorea. Afebrile cases were less hypersensitive, and febrile cases (including those in which fever had been present within one month preceding the test) were least sensitive. Of sixty-six patients of whom a reliable record could be obtained, thirty-one gave a history of sore throats, but only three had an attack of tonsillitis within two or three weeks of admission to the hospital. The authors' results were in agreement with

those of previous investigators who have shown that skin sensitivity increases with age up to 15 years after which no further increase is noted. The allergic skin reaction may be a result of previous infection with hemolytic streptococci. The presence of skin hypersensitivity to intracellular antigens of this micro-organism cannot be regarded as an indication of the special reactivity necessary to produce acute rheumatism on infection. The intradermal reaction does not appear to be of direct diagnostic or prognostic value in cases of rheumatic infection.

**Immune Serum in Acute Poliomyelitis**—Smellie emphasizes the fact that the diagnosis of poliomyelitis in its acute or preparalytic stage is an essential criterion for successful treatment by immune (convalescent) human serum. This preparalytic stage presents a chain of symptoms and physical signs which can be recognized. Lumbar puncture, with cytologic and biochemical examination of the cerebrospinal fluid, is necessary to establish the diagnosis and immune serum should not be administered until this has been done. The employment of convalescent serum in the treatment of acute poliomyelitis is founded on sound experimental data in animals. The serum of a person who has had poliomyelitis has been demonstrated to possess high neutralizing properties for many years thereafter. The blood of adults who have not suffered from the disease clinically may also possess neutralizing properties. While the statistical evidence in favor of immune serum is far from convincing, those who have had most experience with this form of treatment feel that a strong case has been made out for its employment and that ample justification exists for its continued and extended use. The place of lumbar puncture in the treatment of preparalytic poliomyelitis has not yet been settled. The withdrawal of sufficient fluid to allow the pressure to return to normal is probably of value in preventing the development of paralysis or at least in modifying its progress. Evidence is accumulating to show that passive immunization against poliomyelitis may be of value as a prophylactic measure.

## British Medical Journal, London

1 301-352 (Feb. 25) 1933

- British Discoveries in Tropical Medicine During the Last Hundred Years P Manson Bahr—p 301  
\*Cough in Childhood A. Moncrieff—p 305  
\*Etiology and Symptoms of Mitral Stenosis Review of Three Hundred Cases E W Jones—p 307  
Acute Appendicitis Some Mistaken Diagnoses. I Fraser—p 310  
Posterior Position of Occiput in Labor O Bjornson—p 311  
Notes on Injection Treatment of Internal Hemorrhoids G Sacks—p 313  
Reconditioning of Tonsils by Diathermy Current W S Gross and B Varvill—p 313

**Cough in Childhood**—Moncrieff states that in considering the possible causes of cough in childhood, the upper regions of the respiratory tract downward should be examined. Acute inflammatory conditions of the nose and nasopharynx are frequently associated with a cough but in such instances it is almost impossible to exclude inflammation of other portions of the respiratory tract, and the cough may have a complex origin. Coughs of pharyngeal origin are common. Most laryngeal disorders are a combination of inflammation and spasm varying from almost pure laryngitis through laryngitis stridulosa, in which the spasm plays a part, to laryngismus stridulus when underlying tetany produces an almost purely spasmodic condition. The harsh painful, ineffective cough of a tracheitis is a comparatively common sequel to a cold in the head. Inflammation of the bronchi frequently follows tracheitis as the cold spreads down to the chest. Inflammatory conditions of the lung that is chronic inflammatory conditions—nontuberculous fibrosis of the lungs—are common causes of cough in childhood, especially when the cough follows measles or whooping cough. If the origin of the cough has been accurately localized, the treatment becomes relatively simple. For most coughs in children a sedative linctus is best such as 10 minims (0.6 cc) of compound tincture of camphor 10 minims of oxymel of squill, 10 minims of spirit of glycerin and enough water to make 1 ounce (30 cc.) for a child of 2 years. The first step in the treatment of coughing is to eliminate or treat the cause as far as possible. This means measures varying from irradiation of an enlarged thymus to evacuation of an empyema. The steam tent in the treatment of respiratory disorders of childhood has a limited field and many drawbacks. In the treatment of

bronchitis many of the drugs used, such as ammonium carbonate, squill and ipecacuanha, have a direct irritant effect on the alimentary tract if used in anything but small doses, and in young children the use of these drugs may lead to gastroenteritis. When the secretion is thick, during the early stages, alkalis are most valuable and a good combination is 3 minims (0.2 cc) of wine of ipecac, 5 grains (0.3 Gm) of potassium citrate, 5 minims (0.3 cc) of compound tincture of camphor, 10 minims (0.6 cc) of glycerin and enough water to make 1 ounce (30 cc.) three times a day for a child of 1 year. Later on a little ammonium carbonate (one-half grain, or 0.03 Gm) may replace the potassium citrate and if much wheeziness is present a few minims of tincture of stramonium should be added.

**Mitral Stenosis**—Jones analyzed 300 cases of mitral stenosis on clinical lines in order to assess the importance of the history of rheumatic fever and allied conditions in the causation and aggravation of the disease. There is evidence that the disease is commoner in women than in men in the proportion of 3 to 1, and that it occurs at a definitely earlier age in males (50 per cent at the age of 25). Rheumatism is an important etiologic factor. At the most conservative estimate it was the etiologic factor in 80 per cent of the cases. It is probable that 90 per cent is nearer the correct figure in the present series. No other etiologic factor was found present with any degree of constancy. In the majority of the patients the symptoms were similar in type, varying only in degree of intensity. Breathlessness on exertion was the most common complaint, while vague precordial pain not anginal in type was frequently mentioned. Symptoms are often absent until the onset of auricular fibrillation. The actual onset of the fibrillation may be sometimes dramatic, and the patient is able to associate it with some particular strain. Cardiac symptoms may be attributed to some definite occurrence, quite apart from the onset of fibrillation: pregnancy strain, infection and domestic worry. Occasionally a patient presents himself with symptoms of frank disordered action of the heart, and on examination mitral stenosis is found. Symptoms may vary because of some external factor, physical or physiologic.

## Journal of Mental Science, London

7D 1234 (Jan.) 1933

- Thirteenth Maudsley Lecture: Education in Medicine. E. F. Buzzard —p. 4  
Common Standpoint and Foundation for Psychopathology. I. D. Suttie —p. 18  
Amnesia in Relation to Crime. J. S. Hopwood and H. K. Snell —p. 27  
Misidentification and Nonrecognition. S. M. Coleman —p. 42  
Serodiagnosis of Syphilis in Mental Hospital Practice. Second Report. J. E. Nicole and E. J. Fitzgerald —p. 52  
\*Some Remarks on Treatment of General Paralysis by Diathermy. N. B. Graham —p. 89  
\*Therapeutic Malarialization of General Paralytics in the Tropics. A. W. H. Smith —p. 94  
Treatment of the Voluntary Boarder. The Retreat, York, 1891-1930. H. L. Wilson —p. 102  
Study of Sexual Life in Psychoses Associated with Childbirth. E. W. Anderson —p. 137  
A Tour of Some Mental Hospitals of Western Germany. A. E. Evans. —p. 150

**Treatment of Dementia Paralytica by Diathermy**—Graham treated twenty-four dementia paralytica patients by diathermy and obtained a clinical remission in 52 per cent. Present results are superior to those following treatment by malaria. The mechanical control of the hyperpyrexia makes this method of treatment safe. Risk of burns is negligible if ordinary care is observed. Respiratory complications have been a feature and caused one fatality. Owing to the small number of cases treated and the short time that has elapsed since the remissions developed, a definite opinion cannot be given about the value of this method.

**Malarialization in Dementia Paralytica**—Smith states that dementia paralytica is as prevalent among the population of the Malayan peninsula as among that of Europe. This prevalence is, moreover, even less than it would otherwise be because of the retarding effect of concurrent protozoal infections and the tendency of the Orientals' metabolism toward dermatropic rather than neurotropic lesions in all spirochetal diseases. Dementia paralytica responds much less to malarial treatment in Asia because these neurotropic patients represent the most developed of the cases of syphilis, i. e., cases which have persistently resisted the action of exogenous and endoge-

nous antibodies. It is extremely difficult to obtain effective malarial inoculation in Asiatics of the coolie class who have been brought up in a country where malaria is indigenous and who may be presumed to have acquired some degree of immunity. Of the fifty-six patients treated at the author's hospital, the cases being drawn from all nationalities, all of which were inoculated, one was "cured" (discharged), two were markedly improved (discharged), one was slightly improved, six were not improved, two died of malaria, and forty-two failed to contract malaria, and no improvement was noted among any of these such as might be attributed to "apyrexial malarial therapy." All patients who failed to contract malaria were reinoculated at least once, twenty-nine were reinoculated three times intramuscularly, five were reinoculated four times intramuscularly and ten were reinoculated intravenously after the first intramuscular attempt. The other twelve patients commenced rigors within from seven to eighteen days of the first intramuscular injection with the exception of one patient who was reinoculated after twenty-one days, the original rise of temperature having proved abortive, eleven of these cases remitted spontaneously, and only one, the "cured" case, required quinine. The patients were men and they were selected on strong clinical evidence the diagnosis being confirmed later by the serologic observations before inoculation.

## Medical Journal of Australia, Sydney

1 237 266 (Feb. 25) 1933

- Mont Park Mental Hospital and Its Inmates. C. Farran Ridge.—p. 237  
Some Observations on Australian Human Trematode Endemology Based on Local Sheep Fluke Investigations. B. Bradley.—p. 245  
\*Facial Paralysis Due to Toxic Inflammation of Genuiculate Ganglion. J. P. Findlay.—p. 251

**Facial Paralysis**—Findlay states that the symptoms of facial paralysis follow the infection of the genuiculate ganglion and he describes them as a syndrome. Intense otalgia and tinnitus occur followed later by swelling of the ear, which develops into herpes zoster. The facial paralysis develops and in all the cases that he has seen, it has been a complete facial paralysis of the side involved, commencing at the same time as the herpes zoster. Loss of taste occurs, but he has found this rather hard to establish, although two patients were definite and stated that they had no taste for any kind of food stuffs. The distribution of the herpes zoster is constant: the drum membrane, the walls of the external canal, the external meatus, the cavum conchae, the antitragus, the anthelix and part of the lobule are involved. If the inflammation of the ganglion extends along the nerves into the internal auditory canal, hypacusis follows with nystagmus, vertigo and vomiting, the eighth nerve being involved, deafness with tinnitus occurs, simulating a typical Meniere syndrome. The otalgia varies in intensity and duration sometimes lasting for from seven to ten days, being accompanied by severe noises in the ear. Treatment is either medical or surgical. The facial muscles should be supported. The eye should be watched for any corneal abrasions. Massage of the facial muscles should be commenced at once. Tinnitus and vertigo should be relieved by giving bromides. When inflammation of the ganglion has been caused by a toxic infection from a focal sepsis, this focal infection must be eradicated. If the focal sepsis is not located and removed at once the delay results in a long lasting paralysis.

## Journal of Oriental Medicine, South Manchuria

18 112 (Jan.) 1933

- Experimental Studies of Postdiphtheric Paralysis. I. Electrical Excitability of Rabbits When Injected with Diphtheria Bacilli and Its Toxicity as Well as with Diphtheroid Bacilli. T. Maki.—p. 1  
Physiologic Action of Acids and Alkalis on Smooth Muscles. T. Kodama.—p. 3  
Blood Picture of Prostitutes Suffering from Syphilitic Diseases. N. Nishikawa.—p. 5  
Effect on Growth and Internal Development of New Born Rabbits After Injections of Adrenalin Chloride into Mother Rabbits. N. Hoshi and K. Katayama.—p. 6  
Studies of Pneumonia with Especial Consideration of Genesis of Alveolar Phagocytes. T. Takamori, A. Hayashi, Y. Hisamochi and K. Kato.—p. 7  
Experimental Studies on Metabolism of Cholesterol. II. Influences of Injections of Organ Extracts and Products on Contents of Cholesterol in Blood. M. Kameyama.—p. 8  
Id. III. Cholesterol Metabolism and Suprarenal Cortex. M. Kameyama.—p. 10  
Botanic Studies of Hu Man Chiang and Kou Wen. T. Okanishi.—p. 11

Presse Médicale, Paris

41: 601 624 (April 15) 1933

Liver and Gingivodental Lesions. G Parturier and A Pont—p 601  
Normal Figures of Arterial Tension. P E. Chazal and M. Deguy—p 603

\*Acute Abdominal Syndrome of Peritoneal Irritation by Moderate and Progressive Effusion of Aseptic Fluid J Meillère—p 605

**Peritoneal Irritation by Effusion of Aseptic Fluid**—Meillère states that a moderate, slow and progressive effusion of aseptic fluid into the peritoneal cavity causes a peritoneal irritation which manifests itself in an acute abdominal syndrome. The essential elements of this syndrome are a certain degree of nausea with intestinal obstruction, moderate distention of the abdomen with sensitivity to palpation, parietal defense, meteorism more or less obscuring the hepatic dulness and that of the iliac fossas, general fatigue, pale facies and moderate fever. He reports four cases in which this syndrome was observed: three concern a hemoperitoneum and one concerns a sudden production of ascites. The main cause for the production of this abdominal syndrome is the type of hemoperitoneum with progressive inundation by slow bleeding. It may be a postoperative hemoperitoneum, seen most frequently after hysterectomy for fibroma and after extirpation of intraligamentous cysts, a residual hemoperitoneum, seen particularly after splenectomy for rupture of the spleen or after ovariectomy for rupture of tubal pregnancy, or, most commonly, a hemoperitoneum from rupture of an organ. Spontaneous rupture of the spleen produces the most typical abdominal syndrome of peritoneal irritation. At first there is high abdominal pain on slight effort, then an interval of calm, after which the abdominal syndrome of peritoneal irritation develops progressively. If there is no history of trauma, the differential diagnosis involves acute peritoneal infection, acute intestinal obstruction and cataclysmic inundation of the peritoneum. Rupture of the spleen by manifest trauma commonly causes abundant hemorrhage with rapid inundation of the peritoneum and with distinct abdominal signs from the beginning, and is diagnosed by abdominal sensitivity, parietal tension, dulness in the lower part of the abdomen and progressive anemia, but if there is only a moderate oozing of blood, and the inundation is progressive, the abdominal syndrome develops more slowly and assumes the form described by the author. Other forms of hemorrhage from this cause are abundant cataclysmic hemorrhage dominated by anemia, or small localized hemorrhage causing a hematoma. Intraperitoneal hemorrhages from rupture of extra-uterine pregnancy manifest themselves by analogous clinical syndromes. If the hemorrhage is moderate and inundation of the peritoneum progressive, the syndrome is similar to that already described but limited to the pelvihypogastric region.

Deutsche Zeitschrift für Chirurgie, Berlin

239: 505-648 (March 21) 1933

Experimental Study into Minute Volume of Human Heart During Ether Anesthesia, Spinal Anesthesia and After Operative Procedures H Polano—p 505

\*Traumatic Mercurial Poisoning. E. Liebold—p 514  
Treatment of Actinomycosis W Menninger—p 527  
Origin and Treatment of Myositis Ossificans Circumscripta Traumatica. M. Siebner—p 538

Multiple Enostoses (Osteopoikilosis) H Brucke—p 554  
Melorheostosis (Léri) of Lumbar Spine. Peculiar Hyperostotic Ossifying Process. G Woytek—p 565

\*Observations and Results in Four Hundred Meniscus Operations. F Mandl—p 580  
Early Roentgen Diagnosis of Acute Osteomyelitis of Vertebra. Esau—p 615

Primary Jejunal Ulcer with Heterotopic Fundus Mucosa. H Puhl—p 624

Certain Complications of Gastro-Enterostomy H Madisson—p 641  
Thrombosis of Portal Vein and of Mesenteric Veins Producing Picture of Appendicitis F Rusznyski—p 644

**Traumatic Mercurial Poisoning**—Liebold reports a case of mercurial poisoning, in a nurse, resulting from a traumatic injury to the hand by breaking a thermometer. The question of the possibility of mercurial poisoning from the smallest doses of mercury introduced into the tissues is discussed. The author draws the following conclusions: Injuries as the result of breaking a thermometer are capable of introducing mercury into the tissues and of giving rise to mercurial poisoning. The intensity of the poisoning depends on the localization, degree, duration and method of introduction of the mercury, as well as on the susceptibility of the organism concerned. Even the smallest doses are not to be disregarded. The finer the state of division

of the mercury in the tissues, the greater the absorption and, proportionately, the greater the danger of intoxication. Conservative treatment as well as attempts to scrape out the mercury are usually of no avail. Histologic studies of the infiltrated tissue make it evident that the logical treatment is excision of the tissue involved. A roentgenogram should be taken before and after the operation. Even the smallest amounts of mercury call for excision. Primary closure of the wound is inadvisable. The remaining mercury can be amalgamated by placing a copper wire into the incision. Attempts at squeezing or massaging are injurious, as they lead to a finer division of the mercury particles. Toxic symptoms disappear rapidly after excision of the involved tissue.

**Meniscus Operations**—Mandl presents a critical analysis of 400 operations on the meniscus of the knee joint. There were 325 men and 75 women. The ages ranged from 11 to 52 years. The author points out that, while the median meniscus is particularly predisposed to rupture and pathologic changes, the anterior meniscus shows a predisposition to the development of a grating knee and to cyst formation. Ninety per cent of the injuries to the menisci were of traumatic origin, while 10 per cent were non-traumatic. The latter were characterized by primary degenerative changes, the rupture being of secondary importance. In a number of these patients, both menisci of one joint or one meniscus of each joint were found involved. One-sided stress from a particular occupation or sport results in degenerative changes in the cartilage, which in time may lead to a complete rupture. Roentgenologic diagnosis with the aid of a contrast medium has been disappointing. The author advocates an early operation, systematic exploration of the entire joint, removal of inflamed enlarged fat bodies, removal of foreign bodies, and repair of torn ligaments. In the after-treatment the author stresses the earliest use of the muscles, early getting out of bed, active movements and massage. Regeneration of a meniscus was demonstrated in all cases in which the operation was repeated. Of 338 patients followed up for from eight months to ten years, 85 per cent were entirely well and able to resume occupation and sport, and 15 per cent were not cured.

239 649 782 (April 6) 1933

Clinical Experience, Probability and Estimation of Error L. Heidenhain—p 649

Formation of Metastases in Traumatized Tissue M. Siebner—p 664

\*Contribution to Histology and Treatment of Bleeding Breast with Especial Consideration of Late Results in Twenty Patients K. Scherwitz—p 677

\*Question of Mineral Salts in Ileus. F. Eggs—p 692

\*Treatment of Arteriosclerotic and Diabetic Gangrene of Lower Extremities. W. Vogel—p 703

Histology of Line Dividing Partate Patella W. Siemens—p 715

Traumatic Degeneration of Rib Cartilage. C. Bauer—p 733

Autoplastic Covering of Cranial Defects by Transplants from Crest of Ilium E. W. Lexer—p 743

Papillary Tumor of Renal Pelvis with Metastases in Scar K. Gerlach—p 750

Resection Through Ulcer as Operation for Duodenal Ulcer S. Simić—p 758

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**Bleeding Breast**—Scherwitz reports his observations on twenty patients having presented themselves at the Bier clinic in the course of twenty-five years with bleeding nipple. On histologic examination, nine of these proved to be instances of a cyst-epithelioma with malignant transformation in two, and five were instances of cystic degeneration of the breast with malignant transformation in one. No histologic examination was made in six. The study of the course of the disease in the twenty patients suggests that the symptom of bleeding alone does not enable one to form an opinion as to the prognosis in a given case. Persistent bleeding suggests the presence of one or more cysts. To produce the symptom of bleeding, the cyst must communicate with one of the larger ducts. The histologic picture cannot be surmised from the bleeding alone. The author believes that a breast with cystic degeneration is particularly predisposed to malignant transformation. He views cyst-epithelioma as a benign tumor with, however, a pronounced tendency to malignant degeneration. Consideration of all the signs and symptoms rather than of the bleeding suggests the proper treatment. The author does not subscribe to the dogmatic insistence of Klose on a radical removal of the breast with dissection of

the axillary glands based on his assumption that a bleeding nipple signifies a precancerous state. The author favors a more conservative plan such as the removal of palpable lesions by the method of Warren, or a mastectomy followed by plastic fat substitution of Lexer. A careful histologic study of all removed tissues is essential in order not to overlook a malignant condition.

**Mineral Salts in Ileus**—Eggs showed that in experimental ileus in dogs the mineral ions in the blood undergo a characteristic change, namely, a lowering of chlorine ions and a fall in alkali reserve. There is a striking lowering of potassium ions, while calcium ions remain practically unaltered. Sodium ions did not in every instance run a parallel course with chlorine ions, as originally maintained by Haden and Orr. The author calls attention to the fact that short-circuiting bile and pancreatic secretion in experimental ileus gives a milder much different picture without a lowering of chlorides. Introduction of the contents from an obstructed loop into the intestine of a healthy animal through a fistula produces a typical picture of ileus, but without lowering of chlorides. The loss of minerals is explained by the confinement of bile and pancreatic juices within the obstructed loop. Because of a restricted area of absorption as well as because of vomiting there ensues a loss of minerals from the bile and the pancreatic secretion. If the latter are short-circuited so as to be introduced into the bowel below the obstruction hypochloremia does not develop. Loss of sodium ions and of chlorine ions on the part of the liver, an organ normally retaining large amounts of these ions and participating in the maintenance of mineral balance, exposes it even more to the damaging effect of the toxins produced in ileus and further impairs its function. Thus, a sort of a vicious circle is established. The effect of the administration of salt solution therefore is to be considered more than a symptomatic treatment. On the other hand, the author points out that administration of salt solution does not affect the hypothetic toxin of ileus directly but that it neutralizes its effects, the loss of minerals and the loss of water.

**Gangrene of Lower Extremities**—Vogel reports 314 cases of gangrene of the lower extremities treated in Payr's clinic (Leipzig) from 1912 to 1931. Of these, 197 were of arteriosclerotic and 117 of diabetic origin. The incidence in men was twice that in women, 215/99. The average age for the arteriosclerotic group was 69.2 years, while for the diabetic group it was somewhat lower, 62.8. The combined mortality amounted to 58.2 per cent, 60.7 per cent for the diabetic group and 56.4 per cent for the arteriosclerotic group. The major amputations resulted in approximately the same mortality, 51.8 in the arteriosclerotic group and 57.3 in the diabetic group. The immediate mortality after these operations was exceptionally low, more than half of the fatalities resulting from complications setting in after the seventh day after the operation. These were pneumonia, cardiac failure, sepsis, spread of gangrene and coma. The highest mortality occurred after amputation of the thigh. The level of the amputation was influenced by the condition of the circulation and, in the case of moist gangrene, by the spread of infection. The introduction of insulin was rather disappointing in its effect on the treatment of diabetic gangrene as compared with operations on diabetic patients for other causes. The mortality rate in fifty-six patients before the insulin era was 56 per cent, while in thirty-one patients treated with insulin it amounted to 58.1 per cent. The mortality from coma, sepsis and spread of gangrene could not be influenced by prolonged preoperative treatment with insulin.

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- \*Effect of Arteriovenous Aneurysm on Circulation. W. Fick—p. 113  
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**Effect of Arteriovenous Aneurysm on Circulation**—Fick's study is an attempt to explain in animal experiment the mode of production of the clinical phenomenon occurring in arteriovenous aneurysm, namely, rise of blood pressure and simultaneous slowing of the pulse of the afferent artery on compression of the aneurysm. Histologic studies of the afferent artery in one of the author's clinical cases demonstrated extensive degenerative changes. The cause of these is not clear. It

suggests that the method of treatment of the aneurysm by compression is not safe, since rupture of a degenerated vessel may take place. Profound morphologic and functional alterations in the entire blood vascular tree are to be noted in the clinical observations in cases of arteriovenous aneurysm. The veins undergo early dilatation and the arteries develop pronounced degenerative changes only after a number of years, but these are in all likelihood irremediable. The author demonstrated in dogs in which he created arteriovenous fistulas, that with shunting of the arterial blood into a vein the general blood pressure fell. A rise took place after a short period of time, but the pressure did not reach the original level. Sectioning of the vagus and the sympathetic on both sides as well as sectioning of the spinal cord did not interfere with the phenomenon described. Apparently nervous influences are not concerned in its production. The mode of action appears to be hemodynamic, resulting from the sudden termination of a condition which lowers the blood pressure by diverting a certain amount of arterial blood into the venous stream. The pulse became slowed simultaneously with the rise in the blood pressure, and this was apparently not the result of the congestion of the right side of the heart. It was probably the result of a rise in the blood pressure. Dilatation of the veins leads in course of time to dilatation of the right side of the heart and to hypertrophy of the right ventricle. The remote effects of an arteriovenous aneurysm did not depend on its localization, the important factor being the amount of arterial blood shunted into the venous stream. The development of a collateral circulation is an indication for surgical removal of the aneurysm in order to obviate further damage to the vascular tree.

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## Sequelae of Tuberculosis of Bronchial Lymph Nodes—

As the most essential clinical symptoms of tuberculosis of the bronchial lymph nodes, Eliasberg considers those that are produced by pressure on the trachea and on the large bronchi. She points out that the resonant cough and the expiratory panting are caused by this pressure and she advises a tuberculin test whenever these symptoms are present. She thinks that it will prevent serious errors, such as tracheotomy or intubation, because the respiratory symptom is mistaken for a diphtheritic stenosis. If the compression of the trachea and of the bronchi by the tuberculous lymph nodes becomes more pronounced, other disturbances may become manifest. Pronounced compression and narrowing of the trachea or of the large bronchi lead to a disturbance in the air intake which in turn causes an increase or a decrease in the air content of the lung. This contradictory behavior becomes understandable when the pathogenic mechanism is considered. If the compression by the tuberculous lymph nodes permits the normal air intake but hinders the normal expiration by a valvular action, emphysema develops in that portion of the lung which is supplied by the compressed bronchus. The clinical manifestations of compression emphysema are an

inflation of the affected side of the thorax, a more or less pronounced boxy note and a weakened respiratory sound, the character of which is usually difficult to estimate on account of the stridor. The roentgenologic aspects are quite typical. Roentgenoscopy reveals, besides the causal tumors of the lymph nodes, a considerable increase in the air content of the lung on the side of the diseased lymph nodes. As a result of the increased pulmonary volume the intercostal spaces appear wider the diaphragm is lowered and flattened and the respiratory motility is reduced on the diseased side. The mediastinal organs including the heart and the large vessels are more or less displaced toward the healthy side. In the second form, the passage of air to a lung or to part of a lung is hindered. This results in collapse because the decreased pulmonary volume and the decreased intrathoracic pressure force the diaphragm upward and draw the mediastinum into the space of the collapsed lung. A compensatory emphysema develops in the healthy lung. Discussing the treatment of the two sequelae the author emphasizes that all therapeutic measures must aim at freeing the way for the air stream by decreasing the swelling of the lymph nodes and of the bronchial mucous membrane, if the latter is involved. She recommends saline purgatives intravenous injections of hypertonic solutions and low fluid intake. Atropine and an ephedrine preparation may be given in order to limit secretion. Sedatives are advisable since the dyspnea becomes exacerbated by restlessness. Artificial pneumothorax has been recommended for the treatment of atelectasis, in order to increase the lowered intrathoracic pressure and to counteract the mediastinal displacement. Carbon dioxide respiration has been recommended because it deepens respiration, increases the motility of the bronchial muscles, facilitates expectoration and decreases the swelling of the bronchial mucous membrane.

**Treatment of Enuresis**—Feer discusses the involuntary evacuation of the bladder that takes place during sleep. This form of enuresis is not the result of a local impairment of the urinary apparatus but is rather a functional neurosis. It occurs most frequently in psychopathic children. In nurslings the evacuation of the bladder is still a reflex mechanism, but later this reflex action is replaced by a voluntary mechanism, the result of training. The discipline first acquired during the day gradually becomes also effective during sleep. Enuresis is largely caused and prolonged by indifference, lack of will power, coddling, and the desire of the child to be noticed but also by punishment and unjust treatment. The author considers onanism of no importance. He classifies the patients in two groups: the careless and the neuropathic types. For the first or smaller group he recommends training of the bladder by making the child urinate on request several times during the day and making the child, at times, control its urge for evacuation for about five minutes. He also suggests treatment by electricity in the course of which the electrodes are applied over the bladder and the perineum. If, after one or two treatments, there is no improvement, the strength of the current could be somewhat increased to the point of producing pain. The second or neuropathic group of patients is much more numerous than the first group. These children require encouragement, and their self confidence and ambition should be stimulated. The author ascribes great value to gymnastics, which were recommended by Thure and Brandt. The diet is important. It should be largely vegetarian and the salt intake should be low. The vegetarian character of the diet makes unnecessary the administration of sodium bicarbonate, recommended to counteract acidity, to which an irritating effect on the bladder has been ascribed. In order to prevent potassium storage and the resulting chlorine hunger that necessitates late evacuation of the bladder, the eating of potatoes should be restricted. The evening meal should not include too much fluid. Atropine is often a valuable aid, but the author found strychnine ineffective. Daily persuasion by the physician is also important, but to render it effective the patient should be hospitalized and, if possible, should have a private room.

**Waterhouse-Friderichsen Syndrome**—Glanzmann considers massive hemorrhage in both suprarenals, discovered in the course of postmortem examination, the most characteristic sign of the Waterhouse-Friderichsen syndrome. In the last few hours before death the symmetrical apoplexy of the suprarenals is accompanied by an extensive cutaneous purpura. The author reviews the literature of the syndrome, and describes his case.

The syndrome develops in children between the ages of 2 months and 2 years. The earlier history is generally one of complete health. In rare instances prodromal symptoms, such as fatigue, paleness and slight increase in temperature, are observed a day previous to the sudden onset, which begins with vomiting, two or three thin stools, attacks of convulsions with tonic-clonic spasms and high temperatures. A few hours later a cutaneous purpura develops and collapse follows. The trunk is burning hot, while the extremities are cool. The pulse is frequent, sometimes over 200, but soft and hardly perceptible. Paleness of the face alternates with cyanosis. The respiration is accelerated, superficial and occasionally irregular. The child becomes somnolent, apathetic and finally comatose. Death may be preceded by convulsions and by a sudden decrease in temperature. Because of the rapid course of the disturbance the blood picture has only rarely been studied, but the author's case revealed three pronounced changes: (1) progressive thrombopenia, (2) great changes in the white blood picture, particularly a decrease in the polymorphonuclear forms, and (3) appearance of normoblasts. Because the changes in the blood resemble greatly those of purpura variolosa, a septic infection is considered the pathogenic factor of the syndrome, although exact proof in the form of positive blood cultures is still lacking. The suprarenal and cutaneous hemorrhages are probably the result of a combination of capillary toxicosis and of thrombopenia. That the cutaneous purpura is absent in some cases of apoplexy of the suprarenals is probably due to the fact that the patients die before it becomes manifest. The author states that the treatment by administration of epinephrine is not sufficient, because the suprarenals are involved in their entirety and extract of the cortex of the organs must also be given. However even this therapy promises little result in view of the serious septic infection in the Waterhouse-Friderichsen syndrome.

**Rectal Administration of Milk in Nurslings**—Hamburger states that in the treatment of two breast-fed infants with severe pyloric vomiting and with limited gastric capacity he administered by rectum, that part of the mother's milk which could not be taken by mouth. Since the cure of these children took a favorable course, the author decided to try this treatment in children with pyloric stenosis in whom treatment with atropine and with sedatives did not check the vomiting. The nutritive clyster was given from three to five times daily in quantities of from 40 to 60 Gm. The clinical histories of children in whom this treatment was employed indicate that during the period of rectal administration of human milk there was an increase in weight, and the other symptoms disappeared. The author does not wish to give the impression that this is a universal method without failures. The treatment failed when it was continued only for a short time in cases in which the serious general condition did not permit an expectant attitude and a continuation of conservative measures. Attempts to use cow's milk instead of human milk revealed that the favorable action of human milk is not primarily the result of the administration of the components, such as water, salts, lactic acid or protein but is rather due to its specific composition which makes possible a digestion similar to that in oral administration. The author further relates roentgenologic studies on the retrograde ascension of human milk and discusses particularly the action of the ileocecal valve in antiperistalsis. He cites the studies of other investigators, which indicate that in young children this valve does not yet close, a fact which would provide a favorable condition for nutritive clysters.

**Diagnosis of Disorders of Mesenteric Lymph Nodes**—Karger points out that the mesenteric lymph nodes of children may be the cause of pains and that some of the so-called umbilical colics may have their origin in pathologic processes of the mesenteric lymph nodes which may be enlarged or otherwise affected, although the usual methods of clinical examination do not reveal it. Numerous authors admit that lymph nodes of walnut size have escaped them on palpation. The reason for this is probably the softness of the nodes, while their anatomic relations are such as to make direct palpation hardly possible because they are situated in a movable mesentery or on the radix mesenterii separated from the palpating fingers by the intestine. Thus it becomes clear that an indirect method has to be found. The author shows that by means of the deep gliding palpation, according to Glenard and Hausmann, it is

possible to detect changes in the mesenteric lymph nodes indirectly by pressure pain. If inflamed lymph nodes are on the left end of the radix mesenterii, it is possible to press them against the hard foundation of the vertebral column and, even if they cannot be palpated as nodules it is frequently possible to produce a pressure pain. The direction of the palpating fingers should not be vertical but rather from lateral to medial, toward the vertebrae, and the palpating hand should enter laterally from the outer rim of the rectus muscle. Because of the elasticity of the abdominal walls of the child, it is always possible to approach the vertebral column in this manner except when there is ascites or pathologic tension of the abdominal walls. The pressure pain indicates of course only a pathologic process in the region of the radix mesenterii. For the diagnosis of tuberculosis of the mesenteric lymph nodes, it is necessary to test for tuberculin susceptibility, to consider the duration of the pains, and to watch for other symptoms, on the basis of which acute appendicitis can be excluded. Old processes of lymph nodes with shortening of the mesenterium can frequently be detected by pulling on the intestine without pressing it downward, for this imitates the mechanism that leads to spontaneous pain. In cases in which a pathologic process of the mesenteric lymph nodes seemed probable the author frequently tried high voltage roentgen therapy, and often the pains disappeared after the second or third irradiation. In a large number of cases in which abdominal pains existed but in which mesenteric pressure points were not detectable, irradiation was ineffective and a considerable number of umbilical colics remain unexplained.

### Medizinische Klinik, Berlin

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- Criticism of Operative Failures. A. W. Fischer—p. 479  
Surgical Treatment of Profuse Hemorrhage of Gastric Ulcer. K. Reschke—p. 483  
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\*Etiology of Osteochondritis Coxae Juvenilis. H. Hilgenreiner—p. 494  
Experimental Contribution to Calcium Therapy of Inflammatory Gastrointestinal Disturbances. W. Nonnenbruch, P. Mahler and J. Weiser—p. 499

**Radical Operation of Inguinal Hernia**—Moszkowicz states that, although many improvements have been suggested for Bassini's radical operation of inguinal hernia, none of these have replaced the original Bassini method. Only Schmieden, who called attention in 1929 to the weak points of the Bassini suture and made suggestions for its improvement, was given some consideration. His method, tried by many surgeons, sees in the spermatic cord the main obstacle for an exact suture of the inguinal canal and suggests taking the spermatic cord and the testis from the scrotum and leading them through a special opening in the transverse abdominal muscle. The author employed this method but did not find it entirely satisfactory because it makes the intervention considerably more difficult although not essentially more reliable than Bassini's method. The author describes a radical method that follows more closely the one recommended by Bassini and gives more attention to the "weak" points than was done formerly. His method aims to remove, as far as possible, the neck of the hernial sac from the spermatic cord, and to lead them in opposite directions, the neck of the hernial sac inward and upward and the spermatic cord outward and upward. He thinks that a renewed protrusion of the peritoneal sac toward the inguinal canal is thus made practically impossible. The displacement of the spermatic cord under the skin, which is feared by many, has been found to be without danger. The author thinks that this may be the result of leaving the spermatic cord in the cremaster sheath and putting in an additional protective layer by a special catgut suture of the subcutaneous fat. In direct inguinal hernia, in which the danger of relapse is greatest, he does not open the hernial sac but makes at the neck of the sac a purse string suture of the transversalis fascia, into which the sac is invaginated. After this suture is made the patient is asked to cough, in order to ascertain whether the sac no longer protrudes. The further course of the operation is the same as in other cases. The author admits that his technic is not entirely original and that all its different phases have been described elsewhere. He has

combined them in a unified method and therefore feels justified in reporting it. His method has been effective in the treatment of relapses.

**Etiology of Osteochondritis Coxae Juvenilis**—Hilgenreiner shows that, besides congenital luxation and subluxation of the hip, there are other inhibitory malformations of minor degree that occasionally become manifest in the nonluxated joint during the first year of life under the form of a considerable retardation in the development of the center of ossification of the epiphysis, or in a pronounced hypoplasia of this center. Since the retardation in the observed cases of congenital luxation was always followed by a deformity of the head of the femur, that is, by an early form of Perthes' disease, the assumption is justified that spontaneous Perthes' disease of older children is the result of a similar inferior condition of the articulating bones, the later manifestation being the result of the slight degree of the malformation and of the absence of the early causal factor (luxation treatment).

### Monatsschrift f. Geburtshilfe u. Gynäkologie, Berlin

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- Formerly Unknown Biologic Action of Female Sex Hormone. Artificial Growth of Ovipositor in Minnows. K. Ehrhardt and K. Kuhn—p. 1  
Turbidity Measurements in Serum and in Serum Mixtures. Individuality of Blood and Mother Child Relations. P. Wirtz—p. 5  
Tubal Pregnancy Brought to Term with Living Fetus. F. Chanina Gaiduk—p. 22  
\*Therapy of Pyelitis with Especial Consideration of Irrigation of Renal Pelvis and of Permanent Catheterization of Ureters. Elisabeth Stark—p. 29  
Value of Hypophysis Test for Diagnosis of Full Term or of Prolonged Pregnancy. J. Rosenblatt—p. 40  
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Cystic Myomas of Uterus. P. Schott—p. 45  
Sodium Salt of a Barbituric Acid Derivative, New Intravenous Anesthetic for Short and Basic Anesthesia. D. Deinhardt—p. 52  
\*Influence of Moor Baths on Blood Pressure. H. Guthmann and L. Hess—p. 55

**Therapy of Pyelitis**—Stark discusses postoperative inflammations of the renal pelvis and their forms occurring during and after labor, during gravidity, after menstruation or without demonstrable cause. Of seventy-two patients with inflammations of the renal pelvis, fifty-nine were successfully treated with medicinal and dietetic measures, whereas thirteen required local therapy. Of the latter, three were given one or two irrigations of the renal pelvis without continued catheterization, eight were treated by continued catheterization with irrigations, while two were catheterized but were not given irrigations. Local treatment was resorted to because the patients did not react to the medicinal and dietary therapy or because threatening general symptoms existed or the condition presented a chronic character. Irrigation alone without permanent catheterization influenced pyelitis favorably, but the disorder lasted longer than was the case when irrigation was combined with continued catheterization. The author thinks that the failures of local treatment in pyelitis can be traced to the fact that irrigation without catheterization was employed, so that the urinary stasis was only temporarily counteracted, or to the fact that complications of pyelitis existed, which simulated a failure of the therapy.

**Influence of Moor Baths on Blood Pressure**—Guthmann and Hess found that a hot moor bath decreases the systolic pressure. This decrease is more pronounced in medium warm baths than in really hot baths. The authors were unable to corroborate the increase in blood pressure which a number of other investigators claimed to have observed as a result of hot moor baths, for neither the average values nor the individual values showed an increase in the majority of patients. The so-called terminal increase of the blood pressure becomes more noticeable as the temperature of the bath increases. The diastolic blood pressure decreases immediately following the beginning of the bath. In warmer baths and in full baths the decrease is somewhat slower. The amplitude is temporarily increased during the bath. This increase becomes more pronounced as the bath gets warmer. Less hot, full moor baths exert the same influence on the blood pressure as hotter half moor baths. Thus the moor baths can be individualized by giving a half or a full moor bath, or by changing the temperature and the duration of the baths. The authors' observations prove that in women with normal heart action a series of moor baths does not alter the blood pressure.

**Zeitschrift f Geburtshilfe u. Gynäkologie, Stuttgart**

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- Clinical Aspects and Genesis of Endometriosis G Haselhorst—p 1  
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\*New Methods in Intra Uterine Therapy in Endometritis and Febrile Abortion F C. Geller and C. Schuster—p 43  
\*Increase in Tubal Pregnancy and Its Causes E. Bernhard—p 46  
Tumor Relapse Operations P Caffier—p 93  
Complement Fixation Reaction in Gonorrhea of Women. F Siegert and K. W. Schultze—p 114  
Attempts at Measuring Dilatability of Pelvic Floor and Width of Urogenital Hiatus. H. Bachmann—p 130  
Attitude of Physician Toward Law Regarding Abortion W. Lüttge—p 143  
Studies on Body Structure of Three Hundred Puerperal Women of University Women's Clinic in Cologne. H. E. Scheyer—p 154

**Intra-Uterine Therapy in Endometritis and Abortion**—The action of intra-uterine carbon therapy, which, according to Geller and Schuster, has been employed for a number of years in cases of endometritis and of febrile abortion, is primarily a physical one due to its adsorption capacity by which the surface of the tissues is dried and which deprives the bacteria of a suitable growth medium. Bacteriologic studies have shown that the chemotherapeutic action of carbon is slight because carbon does not inhibit bacterial growth in mediums such as blood or serum. Consequently it has seemed desirable to find an intra-uterine treatment in which the adsorption capacity of carbon could be complemented by chemotherapeutic action without producing local irritation or general toxic effects. Since, in veterinary medicine, suppositories containing silicic acid and an acridine hydrochloride derivative were found helpful in such conditions as streptococcal mastitis, metritis and secondary retention, the authors studied the sterility and the antiseptic action of these suppositories. They found the preparation to be of good antibacterial action, and since it contains silicic acid, a well tolerated adsorbent of the greatest surface activity, they decided to try the suppository in human intra-uterine therapy. The therapeutic results will be reported later.

**Increase in Tubal Pregnancy and Its Causes**—Bernhard has studied the histories of 645 cases of tubal pregnancy observed at the Basel women's clinic from 1895 to 1930. He agrees with other investigators that in recent years there has been a considerable increase in extra-uterine, particularly tubal, pregnancies. But in contradistinction to the numerous authors, who emphasize only one etiologic factor, he stresses that there are many causes. He mentions (1) increased gonorrheal morbidity, (2) greater frequency of abortion (3) wider use of contraceptives, and (4) increase in inflammatory processes such as develop following chronic appendicitis. He does not consider the relatively rare pathologic processes, such as carcinoma, tuberculosis and benign tumors of the uterine tubes, a cause of the increased incidence of tubal pregnancy, and he thinks that hypoplasia of the genitalia and neuroses of the sympathetic nervous system have only a slight significance. He admits that effective measures to counteract the further increase are difficult but not entirely hopeless. Especial attention should be given to the prophylaxis and treatment of inflammatory, particularly gonorrheal, processes, and to instruction on the hygiene of marriage and the use of contraceptives.

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\*Insulogenic Infantilism J. Fliederbaum—p 86  
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\*Early Diagnosis of Angina Pectoris by Means of Electrocardiogram. D. Scherf and S. Goldhammer—p 111  
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- Psychic Trauma in Pathogenesis of Exophthalmic Goiter H. Geyer—p 168  
Shock (Collapse) and Natural Immunity R. Leuchtenberger—p 181  
Morphologic and Clinical Differential Diagnosis of Genuine Contracted Kidney H. Kutschera Aichbergen—p 202

**Magnesium Therapy in Angina Pectoris**—In patients with angina pectoris, in whom spasmolytic medicaments failed or accomplished only temporary improvement Bandmann resorted to magnesium therapy. His object was not to counteract the anginal attack as is done with glyceryl trinitrate or amyl nitrite but rather to decrease the frequency of the attacks. The patients were given intravenous injections of a sterile 10 per cent solution of magnesium chloride three times each week. The initial dose was 5 cc, which was gradually increased to 10 cc. The maximal number of injections was twelve in the majority of cases. The injections were given slowly and were always tolerated well, except that the patients had a sensation of intense heat, which first became noticeable in the tongue and mouth and then gradually spread to the lower extremities. But this sensation always disappeared rapidly, and the feeling of heat was less pronounced when the injections were given slowly. All other medicaments were discontinued during the magnesium therapy. Of the fifty patients treated in this manner, twenty-nine showed a considerable improvement of their anginal symptoms and a decrease in the frequency of the attacks. There was only a temporary improvement in eight instances, and the therapy failed in twelve. The best results were obtained in patients in whom the blood pressure was considerably increased. Nineteen of twenty-three of this class of patients showed considerable improvement in their anginal troubles, three showed slight improvement, and the treatment failed in one. This patient had received his injections at irregular intervals. Together with the anginal symptoms, the symptoms of hypertension (headaches, dizziness and insomnia) also showed improvement in most cases, although a decrease in blood pressure was absent. Of the twenty-seven patients with normal pressure, only eleven showed a marked and five a slight improvement whereas eleven were influenced hardly at all. On the basis of his experiences the author recommends magnesium therapy for patients with angina pectoris in which medicinal therapy does not have the desired effect.

**Insulogenic Infantilism**—Fliederbaum defines insulogenic infantilism as an inhibition of growth and a disturbance in the development of secondary and tertiary sex characters, produced by endocrine insufficiency of the pancreas. Although the cases observed by him were always accompanied by diabetes, he admits that there may be cases of infantilism without diabetes, produced by insufficiency of the islands of Langerhans. The anamnesis of the patients with insulogenic infantilism reveals that before or during puberty symptoms of diabetes, such as increased appetite, thirst, cutaneous itching, emaciation and polyuria, became manifest. The second symptom is inhibition of the physical development. As soon as the first signs of severe diabetes become manifest, the growth process ceases. The third symptom is disturbance in the sexual development. If the diabetes becomes manifest before puberty, there is hypoplasia of the genital organs. Other characteristic signs of the patient's insulogenic infantilism are a childish and youthful appearance and changes in the bones. Roentgenologic examination reveals lack of coalescence between epiphysis and diaphysis of the long bones and absence of foci of ossification in the epiphyses. The author differentiates insulogenic infantilism from Loraine's infantilism (cretinism of Bauer), from Brissaud's thyrogenic infantilism, from testogenic infantilism, from disturbances of other endocrine organs, and from the form of infantilism produced by hyperfunction of the suprarenal cortex. Discussing the etiology and pathogenesis of insulogenic diabetes, the author points out that, in addition to the beta cells of the islands of Langerhans (which influence the carbohydrate metabolism), the alpha cells, which exert a trophic influence on the organism, are probably involved. The prognosis is largely dependent on the severity of the diabetes and on the therapeutic action of insulin. In one of the related cases a systematic insulin therapy, continued for one year, resulted in a slight increase in growth and also stimulated the sexual development.

**Diagnosis of Angina Pectoris by Means of Electrocardiogram**—Scherf and Goldhammer state that out of forty patients, who complained of burning, pressure or pain in the cardiac region, thirty-two showed, after the work test, marked

changes in the ST deflection and often also in the T wave and in the QRS complex. The changes were always of the nature of those observed in myocardial impairment. In nine of the thirty-two cases of ambulatory angina pectoris it was possible to register the electrocardiogram also during a spontaneous attack, and the changes observed in these electrocardiograms were essentially the same as those observed after the work test. The electrocardiographic changes were largely independent of the pain. Occasionally they appeared simultaneously with the pain but quite frequently they developed later and disappeared later than the pain, the pressure or the burning sensation. After the work test, they frequently developed without pain or other unpleasant sensations. In patients with angina pectoris it was sometimes sufficient to bend the knees several times in order to produce a lowering of the ST deflection but there was no pain. On the other hand electrocardiographic changes were sometimes absent even when there was severe pain. When the work test was made following medication with glyceryl trinitrate the electrocardiogram frequently showed only slight or no changes. Glyceryl trinitrate administered immediately after work produced prompt disappearance of the pains but the electrocardiographic changes persisted for a time. The administration of phenobarbital, quinidine, atropine or other preparations frequently resulted in a considerable improvement so that the work test was well tolerated and the electrocardiogram showed no abnormalities. In a young person with a mild endocarditic mitral stenosis and with slight insufficiency of the aortic valves who occasionally complained of pains in the cardiac region the work test was followed by the typical electrocardiographic changes, but after a short treatment the pains as well as the electrocardiographic changes vanished. A patient with mesaortitis and with slight insufficiency of the aortic valves developed, without apparent cause after the slightest exertions severe attacks of anxiety (without pain) or he had a feeling of pressure in the cardiac region. The complaints were accompanied by a lowering in the ST deflection but they disappeared immediately following medication with glyceryl trinitrate. There was no increase in the blood pressure which was occasionally reduced. The necropsy corroborated the diagnosis marked stenosis of the orifice of the coronary arteries. On the basis of this report the possibility of diagnosing such cases during life is pointed out. Because in fifty-six patients with severe heart disease (mitral defects, aortic defects, hypertension muscular impairment) the electrocardiogram that was taken after the work test did not show the changes observed in the first discussed patients the authors consider the described changes indicative of a metabolic disturbance in the cardiac muscle the result of a decreased blood perfusion (anoxemia accumulation of abnormal metabolic products).

### Zentralblatt für Chirurgie, Leipzig

60: 849-912 (April 15) 1933

- \*Clinical Demonstration of Possibility of Treating Hemolytic Shock of Blood Transfusion. E. Hesse and A. Filatov—p. 851
- New Discoveries in Pressure-receptor Nervous System and Their Application in Surgery. W. Brauer—p. 854
- Covering of Cranial Defects with Celluloid Plate After Method of Fraenkel. S. Erdheim—p. 858
- Technic of Osteosynthesis in Fracture of Neck of Femur. S. Johansson—p. 864
- Total Gastric Resection. E. N. Stahnke—p. 865
- Treatment of Ingrown Toe Nail. H. Strohe—p. 870
- Resection of Low Lying Duodenal Ulcer. H. von Haberer—p. 874
- Resection of Low Lying Duodenal Ulcer. F. Mandl—p. 875
- Death in Evipan Narcosis. F. Morl—p. 877
- Liver Damage Due to Use of Chinofoin. H. Maxon—p. 879

**Treating Hemolytic Shock of Blood Transfusion.**—Hesse and Filatov demonstrated in a previous work that hemolytic shock caused by introduction of hemolyzed or incompatible blood was accompanied by a fall in blood pressure and by a spasm of the renal arteries that the spasm of the renal arteries was of central origin that it paralyzed renal function and that it was the cause of death. The characteristic clinical symptom of severe lumbar pain was interpreted as the result of spasm of the renal arteries. The authors demonstrated in animal experiments that immediate transfusion with compatible blood relieved the arterial renal spasm and saved the animal. Opportunity to verify the efficacy of this method presented itself in their clinic and is the subject of the present communication. A woman, who belonged to blood group O was given by

mistake a transfusion of conserved blood from group A. After the introduction of 30 cc. of the blood, the patient became agitated and complained of headache and of severe pain in the lumbar region. The transfusion was discontinued. The lumbar pain became agonizing and the patient developed a marked pallor of the face, a fast pulse and sweating and rectal tenesmus. Eight minutes after discontinuance of the transfusion a new transfusion with compatible blood was begun. There was improvement in symptoms after the infusion of 25 cc of blood and the backache was no longer experienced after the infusion of 100 cc. The introduction of 250 cc made all the symptoms of shock disappear and the blood pressure rose to 132 mm. No effect on the kidney function was evident. The urinary output increased daily and save for a trace of albumin the urine which previously contained red cells and hyaline casts was free from abnormal constituents. Hemoglobinuria could not be established. The authors add the observation made in animal experiments as well as in the case of hemolytic shock in their patient that the venous pressure was markedly raised. Shortly after the infusion of incompatible blood there was a free flow of blood from the cannula. This phenomenon was no longer observable after the infusion of compatible blood. The authors feel justified in assuming that, in their method of immediate transfusion with compatible blood, they have found a means of saving patients from the results of a severe hemolytic shock.

### Jurnal Po Rannemu Detskomu Vozrastu, Moscow

13 151 (No 1) 1933

- On Threshold of Second Five Year Plan. S. P. Borisov and N. M. Nikolaev—p. 1
- Research Problems in Pediatrics for Second Five Year Plan. G. N. Speransky—p. 6
- Calcium Concentration in Cerebrospinal Fluid of Epidemic Meningitis and Calcium Therapy. A. A. Lizunova—p. 13
- \*Treatment of Whooping Cough with Ether and with Combined Streptococcus Vaccine. F. A. Baksht—p. 18
- Rare Form of Poisoning in Small Children. N. A. Vakar—p. 25
- Jaeches Pseudoleukemic Anemia of Infants. Kozlov—p. 28
- Moscow Sanatorium for Treatment and Study of Rickets. L. L. Begam—p. 32
- Role of Physician in the Crèche. N. S. Nazarova—p. 39

**Whooping Cough.**—Baksht compares the results of treatment of whooping cough with intramuscular injections of ether with that of injection of combined streptococcus vaccine. There were 177 children in the first group and 269 in the second. Ether was injected in doses of from 0.2 cc. to 3 cc., depending on the age of the child. Ether was given in a 20 per cent solution of camphor liniment into the muscles of the buttock on alternate days the number of injections varying from one to five. Local necrosis occurred once. The streptococcus vaccine was injected on alternate days the number of injections not exceeding four in any one case. The author states that ether injections had a favorable effect on the course of the disease. The number of attacks was diminished and the spasmodic cough was changed after one or two injections to a catarrhal productive cough. The vaccine injections not only diminished the number and the severity of the coughing spells but frequently brought about cessation of the spasmodic attacks thus shortening the duration of the disease. The earlier the treatment was commenced with either method, the more definite were the results. The frequent complications of whooping cough, pneumonia and bronchitis were favorably influenced by either method. Children in whom the treatment was instituted before the complications developed did not develop them subsequently. In view of the relatively small number treated, the author hesitates to state that the method is capable of definitely preventing these complications. Of the two, the vaccine method gave the better results. The course of the disease was shorter and the injections were less painful.

### Ugeskrift for Læger, Copenhagen

95 395-422 (April 6) 1933

- Therapeutic Application of Bacteriophage. Review. B. Heiberg—p. 395
- Epidemic Pericarditis. H. I. Bing—p. 401
- \*Epidemic Myositis Serositis. H. Heckscher—p. 402

**Epidemic Myositis-Serositis.**—Of Heckscher's eleven cases of epidemic myositis, all with favorable course, five also presented a dry pleurisy and one presented pericarditis and myocarditis. Except in the last case the blood sedimentation was normal a few days after the end of the fever.

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## CHRONIC NONSPECIFIC NEPHRITIS

CLINICAL OBSERVATIONS ON FORTY CHILDREN WITH  
RESULTS OF TREATMENT ON FULL DIETS

C A ALDRICH, M D

WINNETKA, ILL

AND

H H BOYLE, M D

CHICAGO

Our purpose in this report is to record our experience with chronic nonspecific nephritis from the standpoint of its clinical manifestations and treatment. The use of the term "nonspecific" nephritis is, we admit, not ideal and we hope not permanent, but it is the best name we could think of to indicate our present concept of the condition. One might choose from the literature any one of the many names that have been applied to it, such as chronic diffuse nephritis, chronic glomerular nephritis, chronic glomerulotubular nephritis, glomerular nephritis with nephrotic component, or others, but all these terms have the objectionable feature that they stress the anatomic location of supposed lesions in the kidneys and, therefore, represent diagnostic guesses that are unnecessary. We feel that the adoption of clinically descriptive terms in classifying disease in living patients is a move toward clearer thinking. When it has been clearly shown that a certain clinical picture always accompanies a specific anatomic lesion it may be justifiable to adopt an anatomic terminology, but even then we fail to see its purpose. An etiologic nomenclature is more serviceable. Although it may be imperfect, the term nonspecific implies, truthfully, that we do not know the cause and is intended to include the implication that a more accurate name may supplant it when justified.

The material on which this report is based consists of forty patients, all but one of whom were seen in the nephritic service at the Children's Memorial Hospital, and all of whom were cared for by us between the years 1920 and 1932. The diagnostic criteria by which these patients were separated from other nephritic patients are so clear that practically no exceptions have been made. Since all these patients manifested all the important diagnostic features, they may be described as comprising a sharply cut clinical group. All presented the following clinical signs and laboratory manifestations at some time in the course of their illness: (1) edema, (2) arterial hypertension, (3) increase in the nonprotein nitrogenous constituents of the blood, (4) hematuria, (5) marked albuminuria,

(6) cylindruria, and (7) a rapidly fatal or chronic course. It should be emphasized, however, that these patients did not all show all these abnormalities all the time. Since this paper attempts to report a personal study of the clinical progress of a large number of patients with chronic nephritis over a period of years, it is unique (chart 1).

## LITERATURE

We have found no reports in the literature which result from the prolonged observation of a series of patients with this type of nephritis. Among the first papers on chronic nephritis in childhood to appear were those of Gull and Sutton<sup>1</sup> in 1872, and of Guthrie<sup>2</sup> in 1896. Sawyer<sup>3</sup> in 1903 reported twenty-eight cases of chronic nephritis and later<sup>4</sup> listed forty-six cases in tabular form. From his brief clinical description it would appear that these were instances of what would now be termed renal infantilism or childhood nephrosclerosis. Greene<sup>5</sup> also reported cases which we believe belong in this classification, which was thoroughly reviewed recently by Mitchell.<sup>6</sup> It is quite likely that some of Greene's patients may have had syphilis with nephritis.

Decker,<sup>7</sup> Heubner<sup>8</sup> and Berkley and Lee<sup>9</sup> each report a case of malignant hypertension in a child. Heubner cites his as occurring once in seventy-three instances of nephritis. None of our cases could be so classified.

If one were to judge from the literature of the last two decades, it would appear that chronic nephritis frequently ensued on acute hemorrhagic nephritis, a conclusion that we have reason to doubt. James<sup>10</sup> reports sixty-seven cases of acute nephritis, nine of which terminated in chronic disease of the kidneys. He noted a tendency to exacerbations with intercurrent infections. Hill<sup>11</sup> considered that acute nephritis might be followed by subacute or chronic nephritis. Heubner<sup>8</sup> who gives a somewhat elaborate classification of chronic nephritis, considers that almost all cases

1 Gull W W and Sutton H G On the Pathology of the Morbid State Commonly Called Chronic Bright's Disease with Contracted Kidney (Arterio-Capillary Fibrosis) *Medico-Chirurgical Transactions* 55: 273 1872

2 Guthrie L G Chronic Interstitial Nephritis in Childhood *Lancet* 1: 585 and 728, 1897

3 Sawyer J E H Chronic Interstitial Nephritis in Children *Birmingham M Rev* 64: 511 and 549 1903

4 Sawyer J E H The Etiology of the Granular Kidney of Childhood *St. Thomas's Hosp Rep* 35: 459 1906

5 Greene C H Chronic Diffuse Nephritis in Childhood *Am J Dis Child* 23: 183 (March) 1922

6 Mitchell A G Nephrosclerosis (Chronic Interstitial Nephritis) in Childhood *Am J Dis Child* 40: 101 (July) 345 (Aug) 1930

7 Decker B L Progressive Loss of Vision *New England J Med* 204: 830 (April 16) 1931

8 Heubner O Ueber chronische Nephrose in Kindesalter *Jahrb f Kinderh* 77: 1 1913

9 Berkley H K and Lee J M Hypertension in Nephritis in Childhood with a Study of Ninety Three Cases *Am J Dis Child* 13: 354 (April) 1917

10 James R F The Prognosis of Nephritis in Childhood, *J A M A* 76: 505 (Feb 15) 1921

11 (a) Hill L W Studies in Nephritis in Children II Clinical Considerations of Classification Etiology Prognosis and Treatment *Am J Dis Child* 17: 270 (April) 1919 (b) Mild Chronic Nephritis in Children *J A M A* 75: 596 (Aug 28) 1920 (c) Nephritis in Children *M Clin North America* 2: 1419 (March) 1919

Read before the Chicago Pediatric Society, Feb. 21, 1933.

This work would have been impossible without the most efficient sort of cooperative work by the nursing staff and the Social Service Department of the Children's Memorial Hospital.

in childhood may be traced to an infection Morse<sup>12</sup> says, "It [chronic nephritis] is almost invariably the result of a previous acute attack." We would like to point out at this time that, of course, there has to be an onset to any chronic disease and that, if the first attack is considered to be acute nephritis, all chronic cases must follow acute nephritis. The point we are anxious to clarify is whether true instances of typical postinfectious nephritis result in chronic nephritis. It may well be that in this antecedent acute infection we have a differential point useful in separating benign from chronic or sclerosing disease. We are not sure, from an observation of 300 cases of nephritis, that chronic disease often follows the postinfectious type.

However, James<sup>10</sup> reports nine cases of chronic disease which followed postscarlatinal nephritis. Calvin and Rosenblum<sup>13</sup> report two, the symptoms of which are similar to ours. Hill,<sup>11a</sup> DeBuys<sup>14</sup> and Boyd,<sup>15</sup> who discuss symptoms, all agree that acute exacerbations are often coincident with infectious processes. All feel that the prognosis is grave. Hill<sup>16</sup> describes cases which he calls a "mild type." He feels that function tests aid in the prognosis. The treatment has

there is not sufficient evidence to prove that postscarlatinal nephritis is a forerunner of adult nephritis and concludes that there is probably no relationship between childhood and adult renal disease. All books stress the importance of protein restriction and removal of foci of infection in the treatment.

Guild<sup>10</sup> has recently reviewed thirty-four cases of acute hemorrhagic nephritis, and, on examination twelve years after the acute disease, she found all patients well and leading a normal life except one who had rheumatic heart disease. None showed renal impairment in function tests. One boy died four years after his nephritis and was examined post mortem. There were no gross or microscopic abnormalities in the kidneys. This work tallies with ours in that we fail to find that acute postinfectious hemorrhagic nephritis commonly leads to chronic disease.

#### DESCRIPTION OF THE CLINICAL COURSE

It is difficult to make any sweeping statements concerning the clinical course of any disease that exhibits as varied a picture as does this one, but certain facts stand out so prominently and are so often misunder-

#### Abnormal Conditions Found at Autopsy\*

Patient	Anasarca	Ascites	Hydrothorax	Hydroperitoneum	Edema of Lungs	Bronchopneumonia	Peritonitis	Pleuritis	Septicemia	Mastoiditis Sinus Thrombosis and Meningitis	Lung Abscess	Skin Abscesses	Cellulitis	Pericarditis
1	+	+												
6						+	+				+			
18						+								+
23	+	+	+			+								
24	+	+							+ Pneumococcus + Strep Hem				+	
30	+					+		+						
32					+	+	+	+	+	+				
33	+	+	+				+	+	+	+				+
35	+				+	+		+						+
36	+		+				+	+	+				+	
37	+		+	+	+	+			+	+				

\* These infections are not necessarily the cause of the nephritis; the authors think it quite likely that they are a result of it.

not been stressed, owing undoubtedly to the bad prognosis, but Morse<sup>17</sup> discusses the indications for Edebohl's decapsulation operation. Evidently the value of this procedure has not stood the test of time, for it is seldom resorted to now.

Pediatric textbooks devote considerable time to this subject and the accounts are quite similar, so that individual references need not be made here. Most authors agree that chronic nephritis may appear insidiously without antecedent disease but stress the influence of acute hemorrhagic nephritis as an etiologic factor. Hoobler<sup>18</sup> quotes the literature to show that

stood that they need clarifying. It may be said that as a rule these children presented all the clinical signs and laboratory manifestations enumerated during the early stages: edema, hypertension, increase in the nonprotein nitrogenous constituents of the blood, hematuria, marked albuminuria, and cylindruria. If death did not occur during the first few months, these manifestations fluctuated widely in severity, tending toward progressive disability (chart 2). After a period of years unless intercurrent infection caused death, renal insufficiency dominated the picture, and the patient died of true uremia often combined with or precipitated by marked acidosis. This fluctuating course was often sharply punctuated or terminated by relapses due to cerebral complications or coincident with intercurrent infections. While using the low protein diet we had never seen the process brought to a standstill, all patients remaining chronic invalids. With changes in treatment later to be described, how-

12 Morse J. L. Nephritis in Childhood. *J. Maine M. A.* 12: 39 (Sept.) 1921.

13 Calvin J. K. and Rosenblum Philip. An Unusual Type of Chronic Nephritis in Childhood. *Arch. Pediat.* 47: 250 (April) 1930.

14 DeBuys L. R. Nephritis in Childhood. *South M. J.* 14: 362 (May) 1921.

15 Boyd G. L. The Course, Prognosis and Treatment of Chronic Diffuse Nephritis in Children. *Canad. M. A. J.* 21: 679 (Dec.) 1929.

16 Hill L. W. Studies in the Nephritis of Children. I. Functional Tests. *Am. J. Dis. Child.* 14: 267 (Oct.) 1917.

17 Morse J. L. Edebohl's Operation in Nephritis in Children. *J. A. M. A.* 69: 525 (Aug. 18) 1917.

18 Hoobler B. R. in Abt I. A. *Pediatrics*. Philadelphia: W. B. Saunders Company 4: 1924.

19 Guild Harriet G. The Prognosis of Acute Glomerular Nephritis in Childhood. *Bull. Johns Hopkins Hosp.* 48: 193 (April) 1931.

ever, we have witnessed a few apparent recoveries which are most encouraging. In order to present our observations in an orderly manner, we shall consider the salient points individually.

1 *The Onset*—In the majority of instances, the disease came on insidiously with presenting symptoms of edema, albuminuria and hematuria. Five patients gave a definite history of acute preceding infection, although we cannot be certain that nephritis did not

edema in this "dry" stage in patients who formerly puffed up with each minor ailment. We feel that it should be emphasized again that few of these patients failed to show edema relatively early in the disease and that several of them were without it during the entire latter part.

3 *Hypertension*—This sign, too, was usually present in the early stages and fluctuated to a marked degree. In general, it subsided after each exacerbation to a point in or just above the upper range of normal. Unfavorable cases showed a tendency to rise gradually toward the end of the disease, and excessively high readings were of bad omen unless they were associated with symptoms of cerebral edema. At the conclusion of such an attack the pressure dropped to its former level. Acute cerebral complications did not occur as often in chronic nephritis as in the acute postinfectious type, but they were just as amenable to treatment. The advent of such symptoms must not be confused with terminal uremia, true renal insufficiency. In the latter event no treatment is of use, whereas in the former, adequate administration of fluids and magnesium sulphate by mouth, muscle or vein is a life-saving procedure. Four of our patients had acute cerebral attacks of this type.

4 *Nonprotein Nitrogen Values of the Blood*—Some elevation of the figures for the nonprotein nitrogenous constituents of

the blood was often but not always found at the first observation, and this tended to fluctuate with the other symptoms. Late in the disease it rose, paralleling to a certain extent the course of the blood pressure. Many patients went on for years with approximately normal values, only to have them rise with a terminal insufficiency. The figures in children do not rise as high as they do in adults, however.

5 *Hematuria*—This was usually present to a marked degree early in the disease and, although gross hematuria rarely existed for a long period, it appeared

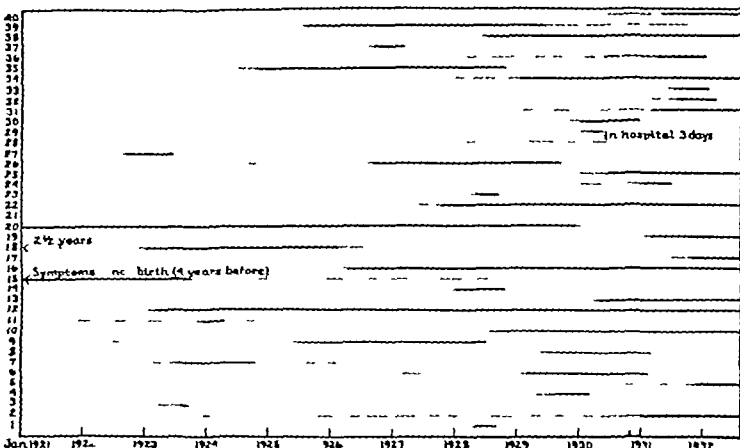


Chart 1—Duration of observation and duration of illness of all patients in this group. The broken line shows illness not supervised in this clinic. The heavy line shows illness while under observation. The beginning and end of each line shows the approximate onset and termination respectively.

antedate the infection. Six others described an ordinary cold or other questionable mild infection preceding the onset. One had a severe urticaria just before the onset. The remaining twenty-eight gave absolutely no history of acute antecedent infection of any kind. Headache, nausea and nocturia were frequent complaints. This type of onset contrasts sharply with that found in acute postinfectious hemorrhagic nephritis and makes us doubt the identity or chronological relationship of the two diseases. Careful history taking was necessary to bring out this point because, as might be expected, these patients were often first seen during acute exacerbations coincident with infectious processes. However, a careful check of the history usually revealed that symptoms of the nephritis preceded the acute infection. This point is of utmost importance in making a prognosis, because, if it can be definitely established that acute bacterial infection has preceded the first symptom of nephritis, one is justified in assuming a good prognosis and in excluding the patient from the classification of nonspecific nephritis.

2 *Edema*—Edema was usually found in the early stages but was often absent during the major portion of the illness (chart 3). All cases exhibited it at some time or other. The degree of edema varied considerably but usually was marked, resembling that seen in nephrosis. Moreover, as in nephrosis, the edema fluctuated for several months or a few years in some of the cases. We feel that the good response to salt free diets in this disease is an important differentiating point. In chronic nephritis salt restriction often controlled the edema fairly well, while in nephrosis we have never satisfied ourselves that it had therapeutic value. Many of our patients who seemed to require a salt free regimen over a few years finally became "dry," after which salt was well tolerated in large amounts. Even severe infectious processes have failed to produce

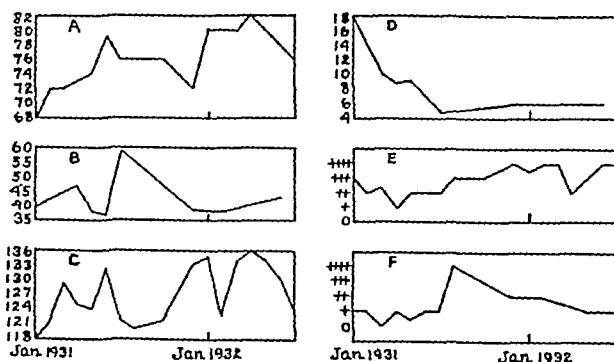


Chart 2—Fluctuation in various factors during the observation of one patient over a period of about eighteen months. A weight B nonprotein nitrogen C systolic blood pressure D Mosenthal variation E albuminuria F hematuria.

constantly in some. Such patients did poorly. On the other hand, hematuria was absent for prolonged periods in some patients even at the onset. This fact accounts for much confusion in diagnosis, especially in the differentiation from nephrosis. Careful history taking with hematuria in mind, prolonged observations, and the finding of other differentiating abnormalities such as hypertension and high blood nonprotein nitrogen values

will usually decide the question in a clear-cut manner. The fact that the hematuria is often transient, however, is responsible for many mistakes in diagnosis and prognosis.

**6 Albuminuria**—The amount of albumin was excessive, with rings 1 cm in thickness with Exton's reagent the rule rather than the exception. Great misunderstanding exists as to the constancy of this laboratory observation. Our experience with this group leads us to believe that the albuminuria is practically constant.

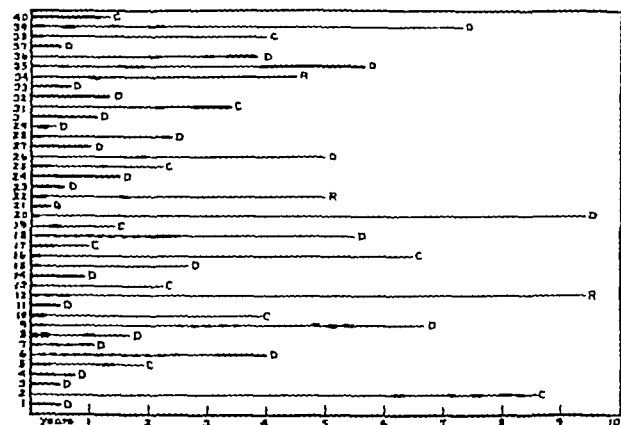


Chart 3—Incidence of edema in all the patients. The heavy parts of the lines represent periods in which the patient was edematous and the light parts represent periods during which edema was not present. It will be noted that edema was more common in the early stages of the disease than in the later periods. D death R recovery C chronic.

Records of patients who now have albuminuria show that, in a total of 1,479 reactions reported, only 26 were negative (0.18 per cent). The negative results have been so rare that we feel they may as well be ascribed to mistakes in technic or identity of the samples as to exceptions to the rule that the urine always shows albumin in this condition. The statement often made that the urine in chronic nephritis frequently clears up only to show a recurrence of albuminuria later must be challenged. Only two patients of the entire group showed positive albumin reactions following two or more consecutive negatives. Moreover, in our patients who have recently recovered, the albuminuria persisted long after all the other signs disappeared and, having once disappeared in such patients, did not return.

**7 Cylindruria**—Casts were always found in the early stages. They were a constant finding in all of our patients until recent changes in treatment were instituted. Since then we have seen patients in whose urine no casts have been demonstrable over many months, in spite of marked albuminuria.

**8 Results of Renal Function Tests**—In our work, because all patients were children, we used only the more easily applied tests. These included the two-hour specific gravity, water excretion and phenolsulphonphthalein tests. As might be expected, the water excretion test followed the course of edema rather closely. In most instances the variation of specific gravity became less than ten points soon after the onset. The variation increased somewhat with improvement in some of the patients, but a normal concentration response was relatively rare. The specific gravity tended to become lower and lower as the disease progressed. The phenolsulphonphthalein excretion was markedly diminished rather early in most cases, and,

surprisingly, some patients lived on for years with excretions of only 5 to 15 per cent of the dye.

**9 Autopsy Results**—Twenty-seven patients died. Twelve of these were examined post mortem. A complete discussion of the results cannot be attempted here, but two facts stand out in bold relief. First, the renal lesions were absolutely diffuse, no parts of the organs being spared in the degenerative and sclerosing processes. Second, at the time of death the patients were often grossly infected in various parts of the body, whereas until a relatively short time before death little clinical evidence of chronic microbic infection was demonstrable, as indicated in the accompanying table.

#### COMMENT

Critical consideration of the facts just outlined in the clinical picture and pathologic anatomy of this disease made us question some of the generally accepted theories as to its pathogenesis and influenced our management of the patients.

When we noted that only an occasional patient with chronic nonspecific nephritis gave a history of acute postinfectious nephritis at the onset and that even the patients most severely ill with postinfectious nephritis usually made complete and permanent recoveries, we began to doubt that we were dealing with identical processes. It seemed possible that the pathologic lesion in acute postinfectious hemorrhagic nephritis might be of a more benign nature than the progressive sclerosis found in chronic nonspecific nephritis. We began to think of chronic nephritis as a separate clinical entity and attempted, we think with considerable success, to differentiate it even in the early stages, before chronicity alone established its nature. This attitude made it necessary for us to look for some other cause than microbic infection, and, in casting about, we noted that almost all

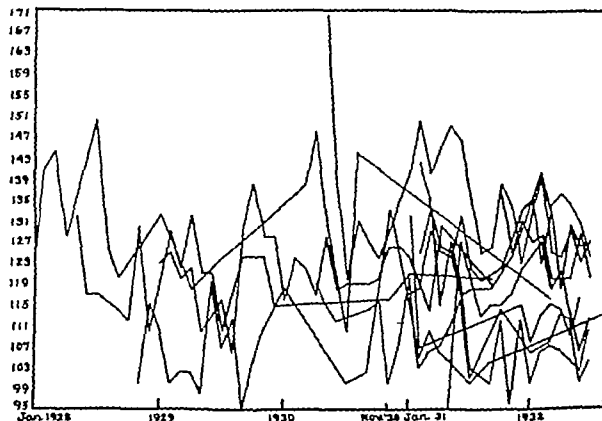


Chart 4—Fluctuations in systolic blood pressure over a period of four and a half years in the patients who were given the high protein high vitamin diet. It will be noted that there is no marked elevation in blood pressure following this change in November 1930.

cases were found in dispensaries, that the disease was a great clinical rarity among the well-to-do. Moreover, the patients were malnourished and surrounded by poor hygienic environment.

In the fall of 1930, having arrived at this stage in our observations, we were faced with a serious problem. The morale of the clinic was at a low ebb. All the patients with chronic nonspecific nephritis were receiving a low protein diet and many were forced to eliminate salt as well. Almost all were clinically ill and obviously dying off in spite of our good intentions.

They were a miserably ill, unhappy group of children. It was no pleasant duty to go on week after week and watch this process complete its degenerative course. Physicians, nurses, social service workers and patients had no heart in the job.

Therefore, in October, 1930, we resolved to make a radical change. All preconceived ideas of diet were discarded and we decided to treat these children exactly as we would any other group in as poor a nutritional state and to make every effort to improve their nutrition and their physical and mental hygiene. The following

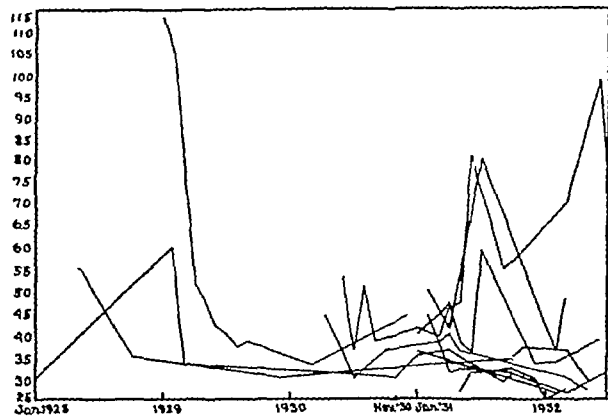


Chart 5—Fluctuations in nonprotein nitrogen in the patients given the high protein high vitamin diet. It will be noted that in only one instance is there an elevation after the change in diet.

reasons were responsible for the decision. 1 The disease manifested some of the evidences of a nutritional, hygienic or deficiency disease. 2 Our previous treatment had been futile, if not actually harmful. 3 We hoped to make the remaining months or years of the patients' lives more endurable by giving them the satisfaction of eating palatable food just as did other folk.

The following measures were taken. All patients were put on a diet which we hoped might compensate for any deficiency. Meat or eggs were ordered three times daily, salt was allowed to all those who were not definitely edematous, and all the vitamins we had ever heard of were included in their diet. Cod liver oil, yeast, orange juice, and raw and cooked vegetables were prescribed. Wherever this could not be accomplished at home, we invoked the help of charitable organizations or took the patients into the hospital. In addition to this, every effort was made to improve the general hygienic environment of the children, including sun baths in the summer, fresh air, and the like.

While this was undertaken with some slight misgivings on account of precedent, we did not feel too guilty on account of the ten years of experience we had had on the regimen prescribed by precedent. The results following the change were so rapidly noticeable, however, that within three months doubt changed to surprise. All the patients began to look better. One returned with specimens of urine that were and have since been, constantly free from albumin. Since that time two more have become albumin free, a pleasure we had never before experienced. One by one the children became able to reenter school. Hemoglobin estimations rose along with the weight curves, and this without edema. Clinical improvement in general health was noted within a few weeks.

With still greater satisfaction, we found that in general neither the blood pressure (chart 4) nor the blood

nonprotein nitrogen values (chart 5) rose with this change.<sup>20</sup> In fact, the tendency was toward a decline in many instances. While the albuminuria has continued in most children, it tended to decrease in amount and disappeared entirely in three instances. The red blood cells have disappeared in eleven of fourteen living patients and casts are now a relatively rare observation among them.

Of the ten patients put on this regimen in October, 1930, only two have died. While apparently improving, they left our care and were put on low protein, salt free diets in other institutions. One patient died under such treatment, and the other returned to us in a moribund condition to die in acidosis of true uremia.

We have now under observation in the dispensary thirteen patients, twelve of whom have been receiving this diet for over two years. All are attending school regularly. With one exception, all are in an excellent nutritional state, and the weight, hemoglobin and tissue turgor are good (chart 6). The one child who is not in good condition was in desperate shape before the new regimen was instituted but has been able to resume school work in spite of his severe nephritis. He is the only patient in this group who shows a progressive loss of renal function.

As a result of two years' experience with this dietary and hygienic regimen, we can report that the majority of our patients have shown definite clinical improvement, that three have shown complete disappearance of clinical evidence of the disease, that one is continuing the downward course at a retarded rate, and that the death rate has been decidedly reduced.

#### SUMMARY

A brief description of the clinical features exhibited by forty children with chronic nonspecific nephritis is

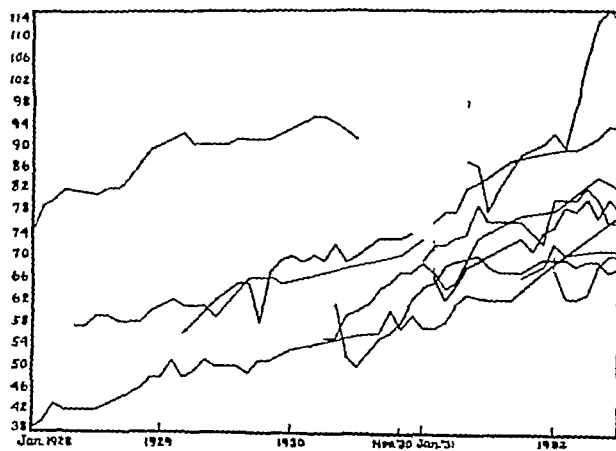


Chart 6—Weight increment in these patients over a period of four and a half years. The vertical broken lines show the initial loss of weight due to edema.

given, including the results of treatment over ten years with low protein diets.

After the institution of high protein, high vitamin diets and improved hygienic care, definite clinical improvements were seen.

This high protein diet did not cause elevation of the blood pressure or increase the nonprotein nitrogenous constituents of the blood in the group as a whole.

<sup>20</sup> Recent observations on one patient in the stage of terminal renal insufficiency seem to show that when the nitrogenous retention is marked added protein may increase the nonprotein nitrogen of the blood. This was not the case in the instances with moderate retention.

It is suggested that this type of chronic nephritis is due to some hygienic or dietary cause rather than to microbic invasion and that infection may be the result of the disease rather than its cause

We are describing a children's disease, we do not know that this identical condition exists in adult life

723 Elm Street—1180 East Sixth-Third Street.

## PURPURA HAEMORRHAGICA IN CONGENITAL SYPHILIS FOLLOWING ARSPHENAMINE

### REPORT OF TWO CASES

J. V. BICKFORD, M.D.

AND

R. C. TILGHMAN, M.D.

BALTIMORE

Studies of the toxic effects of the arsphenamine derivatives have received a prominent place in the literature as the extent of the usage of these drugs has increased in the treatment of syphilis. To the list of untoward reactions caused by them have been added the blood dyscrasias. That a selective injury of one of the elements of the hematopoietic system may be caused by the arsphenamine preparations is shown by the reports of (1) cases of granulocytopenia, in which there results a suppression of the granulocytic series, or (2) of cases of purpura haemorrhagica in which a thrombocytopenia is the conspicuous feature, or (3) of cases of aplastic anemia in which there is a generalized depression of all types of blood formation. The severity of the blood disorder is variable, in some there is complete recovery with restoration to a normal blood picture, in others the outcome is fatal. Fortunately, blood dyscrasias resulting from antisyphilitic treatment with the arsphenamines are infrequently encountered.

Analytic studies in two papers of recent date have dealt with the reported cases of postarsphenamine blood dyscrasias. Loveman,<sup>1</sup> in April, 1932, including Farley's series,<sup>2</sup> reviewed sixty-four cases with thirty-one deaths, or a mortality of 48 per cent. Thirty of his patients had aplastic anemia, of whom eighteen died, a mortality of 60 per cent, fourteen had purpura haemorrhagica with five deaths, or 36 per cent mortality, and fifteen were examples of granulocytopenia with six deaths, or 40 per cent mortality. In thirty-five of these patients neoarsphenamine was the drug employed with seventeen deaths, arsphenamine in ten patients with five deaths, sulpharsphenamine in six with three deaths, silver arsphenamine in two with one death, and mixed arsphenamine therapy in eight with four deaths, arsphenamine preparations were used but the kinds were not stated in three patients with one death.

McCarthy and Wilson<sup>3</sup> in November, 1932, were able to collect from the literature seventy-nine cases of arsphenamine poisoning, including many of those reported by Loveman. Sixty-five of these were classi-

fied as follows: 1. Thrombocytopenic purpura, twelve cases, in all of which recovery occurred, in seven of these cases neoarsphenamine was the last drug used and in the remaining five cases sulpharsphenamine was the last drug used. 2. Associated thrombocytopenia and granulocytopenia, seven cases, in one of which death occurred, in five of these cases (including the fatal one) neoarsphenamine was used, in one sulpharsphenamine and in one silver arsphenamine. 3. Granulocytopenia, twelve cases with four fatalities, or 33 per cent mortality, arsphenamine was the drug used in four cases, neoarsphenamine in five, sulpharsphenamine in one, and both neoarsphenamine and sulpharsphenamine in two. 4. Aplastic anemia, thirty-one definite and three probable cases with six recoveries, or a mortality of 83 per cent, in this group arsphenamine was used in twenty-two cases, sulpharsphenamine in five, both neoarsphenamine and sulpharsphenamine in one, and arsphenamine in four, in two cases the arsphenamine preparation was not specified. McCarthy and Wilson take care to point out that while the bulk of the blame for the toxic reactions has been placed on neoarsphenamine, this drug has been more generally used than others of the arsphenamine series. Relative to the total use of sulpharsphenamine, blood dyscrasias from this preparation are surprisingly frequent.

Our purpose in this paper is to report two cases of purpura haemorrhagica in children with congenital syphilis following the use of neoarsphenamine. These are the only examples of postarsphenamine blood dyscrasias of any kind occurring in the syphilis clinic of the Harriet Lane Home for Invalid Children of the Johns Hopkins Hospital. The records show that 1,825 children have been treated for syphilis in the Harriet Lane Home and a total of 25,950 treatments given from October, 1922, to January, 1933. Though no figures are available of the exact number of children who have received arsphenamine, nearly every child treated for syphilis receives arsphenamine at some time during the course of antisyphilitic treatment. It is apparent, therefore, that the incidence of postarsphenamine blood dyscrasias in children is extremely low.

### PROTOCOLS

CASE 1.—A. R., a white boy, aged 6 years, was admitted to the hospital March 1, 1932, shortly after an antisyphilitic treatment, with the diagnosis of a severe reaction to neoarsphenamine.

The boy was first seen in the outpatient department in August, 1927, four and a half years before (at the age of 1½ years). He was sent in to have a Wassermann test, which proved to be positive. It was learned at this time that both parents were syphilitic, the father had previously received antisyphilitic therapy and the mother died in October, 1927, of paralysis from syphilis, the exact nature of which could not be determined from the records. There was no family history of miscarriages or stillbirths.

The physical examination of the patient at the time when first seen was reported as not showing any of the stigmas of congenital syphilis. There was no general glandular enlargement and the liver and spleen were not felt. A second observer, three weeks after the first examination, noted slight general glandular enlargement and a palpable liver and spleen.

The first antisyphilitic therapy was started Sept. 13, 1927. The child was given 0.19 Gm. of sulpharsphenamine. For a year and a half he received fairly regularly weekly treatments of sulpharsphenamine and the Wassermann reaction remained positive. Owing to irregularity in reporting for the injections, many of the six weeks courses were incomplete. In the history during the first course of treatment, "trouble with his bowels" was noted. Another later report reads "sick and vomits when ever he does not get his treatment. An infantile reaction."

From the Harriet Lane Home, Johns Hopkins Hospital and the Department of Pediatrics, Johns Hopkins University (Dr. Bickford) and from the Department of Medicine, Johns Hopkins Hospital (Dr. Tilghman).

1. Loveman, A. B. Toxic Granulocytopenia, Purpura Haemorrhagica and Aplastic Anemia Following the Arsphenamines. *Ann. Int. Med.* 5: 1238 (April) 1932.

2. Farley, D. L. Depressed Bone Marrow Function from Arsphenamines Including Type of So-Called Agranulocytosis. *Am. J. M. Sc.* 179: 214 (Feb.) 1930.

3. McCarthy, F. P. and Wilson, Robert Jr. The Blood Dyscrasias Following the Arsphenamines. *J. A. M. A.* 88: 1557 (Nov. 5) 1932.

After the third injection of the seventh course of sulpharsphenamine, a note in the history reads 'does not know condition of the child after last treatment.'

Following the next treatment, the fourth in the seventh course, a purpuric rash and nose bleeding were recorded. The patient was not brought to the dispensary until eleven days afterward (March 23, 1929). Physical examination at that time showed an enlarged lobulated liver extending 4 cm below the costal margin, spleen not palpable, several large black and blue spots evidently from traumas and a fading purpuric rash. Laboratory data included a bleeding time of ten minutes, platelets markedly reduced, and a leukocytosis with a relative lymphocytosis, estimated from a blood smear.

From April 9, 1929, until June 16, 1931, over a period of twenty-seven months, the boy received bismuth instead of arsenical compounds as an antisyphilitic therapy. In June, 1931 he was given one dose of neoarsphenamine without any reaction. Between June, 1931 and February, 1932 he did not receive treatments but on the latter date a regular course of neoarsphenamine was started. The first dose, of 0.15 Gm., did not give a reaction, the second dose, of 0.24 Gm., also was without any untoward reaction. The third dose was increased to the calculated amount for the patient's age, and 0.31 Gm. of neoarsphenamine was given. Immediately on leaving the treatment room after this injection, the child began to vomit. In a few minutes he was cyanotic, the pulse was of poor quality. The child was at once admitted to the hospital. In a word, the appearance and the physical examination were characteristic of those encountered in shock.

Treatment in the ward consisted of morphine and epinephrine followed by intravenous administration of dextrose. The child responded well, the cyanosis improved and the

levulose tolerance test was performed on the third day after the reaction with normal results.

At the time of discharge, on the sixth day, the child appeared well. The petechial spots and hemorrhagic discolorations were still present but were fading. The liver remained 4 cm below the costal margin, and the tip of the spleen was just palpable.

On examination three weeks after discharge, the child appeared healthy. The liver edge was at the costal margin, and the tip of the spleen could still be felt. There were no evidences of the purpuric eruption. Laboratory data at this time included a bleeding time of three and one-half minutes, clotting time, three minutes, red blood cells 4,620,000, hemoglobin 86 per cent, white blood cells, 9,170, with a normal differential count of 61 per cent polymorphonuclears and 31 per cent lymphocytes. A blood smear was still practically lacking in platelets, only two small clumps of platelets being seen in an entire blood film.

The patient was not given any further antisyphilitic treatment. Examination in November, 1932, seven months after the purpuric reaction showed that the child was normal except for chronic tonsillitis and a positive Wassermann reaction. No stigmas of congenital syphilis were observed. The child was allowed to continue on probation.

The child was last seen, Feb. 11, 1933, approximately one year after the reaction to arsenical therapy. Laboratory examination gave normal results. The bleeding time was two and one-half minutes, the clotting time, three minutes (the clot retracted normally). The total white blood cell count was 7,200, the differential count polymorphonuclears 45 per cent, lymphocytes, 45 per cent, monocytes, 10 per cent. The smear showed platelets in normal numbers and no abnormalities.

CASE 2—E. B., a well developed white boy, aged 8 years, was admitted to the hospital, Feb. 5, 1929, with the complaint of bleeding from the gums, easy bruising and a rash after an illness of two weeks, commencing abruptly following an intravenous injection of 0.375 Gm. of neoarsphenamine.

The mother was infected with syphilis by her first husband seven years before the birth of the patient and she was treated at the time and pronounced cured. Later she divorced the husband and married the man who became the father of the patient. The first pregnancy resulted in an uninfected child. The second pregnancy, by the second husband, resulted in another uninfected child. The third pregnancy resulted in the birth of the patient.

The child had snuffles in infancy and hydrarthrosis at the age of 5 years. At this time both the mother and the child were discovered by their private physician to have positive Wassermann tests. The child was treated by the physician for two years (between the ages of 5 and 7 years) and was given repeated courses of intravenous therapy. Notwithstanding this, he developed a bilateral interstitial keratitis and was brought to this institution July 24, 1928, in the fourth month of the keratitis. At that time a suggestively positive blood Wassermann reaction was reported but the spinal fluid Wassermann reaction was negative. The first treatment at the Harriet Lane Home was given July 31, 1928, and the blood Wassermann reaction was reported negative August 8. There had never been any unfavorable reaction to previous arsenical treatment. The keratitis healed well.

In all, the child had received two full six weeks' courses of neoarsphenamine in the doses of 0.33 Gm. each and at the beginning of the third course the dose was increased to 0.375 Gm. (the patient weighing 56 pounds, or 25 Kg., at the time). About an hour after the third injection in this course he began to bleed freely from the mouth. In a few hours after the treatment he was covered with petechial spots. About thirty-six hours after the injection he bumped himself against a box, a very trivial injury, and a huge effusion of blood into the gluteal muscles occurred. By this time he was covered with small purpuric spots pretty much over the entire body. There were no constitutional symptoms. The bleeding time was eleven minutes, the clotting time seven minutes. A stained blood smear showed a leukopenia with a relative agranulocytosis. No platelets were seen in the smear. On the following day the stools became tarry, but the child had swallowed much blood from the mouth bleeding.

#### Levulose Tolerance Test in Case 1

Fasting	69 mg	per	hundred	cubic	centimeters
½ hour	92 mg	per	hundred	cubic	centimeters
1 hour	110 mg	per	hundred	cubic	centimeters
2 hours	71 mg	per	hundred	cubic	centimeters
3 hours	66 mg	per	hundred	cubic	centimeters

general condition became better. By evening (nine hours later) the child seemed so well that it was expected he would be discharged the following morning.

The following morning, however, it was discovered that a purpura had developed during the night. There were ecchymotic discolorations about the site of the intravenous and hypodermic injections. Bleeding was occurring from the nose and gums. There were numerous small petechiae over the pharynx and palate, some over the chest and tibias. A submucous hemorrhage about 2 cm. in diameter was present in the buccal cavity. The liver was palpable 4 cm. below the costal margin. The spleen was not felt. There was no jaundice present. Laboratory examination revealed red blood cells 4,700,000, hemoglobin 86 per cent, white blood cells 7,800, with a differential count of 63 per cent polymorphonuclears and 32 per cent lymphocytes. No abnormal cells were seen in the stained smear. The platelets were so few that a count by the direct method was worthless, by the indirect method the platelet count was 68,000. Unfortunately, determinations of bleeding and clotting time were not done at this time. The patient was given two small transfusions of 120 cc. of citrated whole blood, after the second of which the bleeding stopped. The urine at no time showed any blood. It contained a trace of albumin on admission but none on subsequent examinations. The stool was faintly positive to the guaiac test on the third day after admission, probably because of swallowed blood from hemorrhages in the mouth. The blood pressure was 98 systolic, 60 diastolic, and the temperature remained normal throughout the entire hospital stay. The number of white blood cells increased from day to day until at the time of discharge the count was 12,500. The differential count remained normal throughout. Even at the time of discharge, five days after the reaction, the blood smear was practically devoid of platelets. A van den Bergh test done on the third day after the illness gave an indirect reaction. Since the question of liver damage was considered, a

For the few days intervening between these episodes and the time of admission to the hospital little new was noted. The child did not seem unwell and there was no frank bleeding. The condition remained stationary, with occasional outcropping of petechiae.

On the morning of admission, eleven days after the injection, which seemed to start the bleeding and the beginning of symptoms, the mother took the child to the dental department, where two teeth were extracted. Bleeding followed, and the child was brought immediately to the hospital.

On physical examination the child was not in acute distress. No stigmas of congenital syphilis were discovered. Scattered everywhere over the body, with the sole exception of the scalp and face, there was a petechial eruption (less marked on the back), which did not blanch on pressure. The color of the petechiae varied from a fairly bright red to a dirty brown. There were numerous larger purpuric patches looking quite like bruises scattered here and there over the body varying in size from 0.5 to 1.5 cm. Two striking purpuric areas were present, one roughly, 8 by 5 cm in the left antecubital fossa and the other occupying the greater part of the left buttock. Neither of these patches was tender. The buttock felt firm but evidently was not infected. The mucous membranes of the eyes showed some petechiae. The buccal mucosa was covered with a film of fresh blood and also many small petechiae and larger patches. There was no general glandular enlargement and the epitrochlear lymph nodes were not palpable. The pupils were slightly dilated and reacted sluggishly to light. Except for a refractive error the eyes were normal. Examination showed the heart and lungs to be normal. There were no masses or tenderness in the abdomen. The liver was

The blood sugar determinations showed a normal curve and provided nothing on which to base suspicion of liver damage. Dye tests were not done, because it was feared that any such procedure might cause another purpuric attack.

The child was seen one week after leaving the hospital. He had had no further purpuric manifestations. A blood smear at the time showed some anisocytosis and poikilocytosis, granulocytes that appeared normal, and a normal number of platelets.

No more antisyphilitic treatments were given until two months after the purpuric attack at which time treatment with a bismuth compound was started, and continued until three full six weeks courses had been given. At the end of that time, treatment was considered complete.

Since October, 1929, until the present time, February, 1933, Wassermann examinations repeated every six months have continued negative. The last examination, Feb. 14, 1933, showed a normal child with no stigmas of congenital syphilis and a negative Wassermann reaction. Laboratory examinations gave normal results. The bleeding time was two minutes, clotting time, three and one-half minutes (test tube method), clot retraction, normal. A differential count showed polymorphonuclears, 53 per cent, eosinophils, 1 per cent, lymphocytes 41 per cent, monocytes, 5 per cent. Smears contained abundant numbers of platelets, white blood cells, 8,000.

#### COMMENT

In both of our cases, no familial tendencies to bleeding could be discovered and no hemorrhagic tendencies in the patients themselves had ever been observed. In case 1 the reaction was immediate and severe with the manifestations of circulatory collapse. In case 2 the reaction was more prolonged and more gradual in onset and less severe. In case 1 there had been a previous mild reaction three years earlier, which in retrospect may be taken to indicate a sensitivity to the drug. Patient 2 exhibited nothing to indicate drug or chemical sensitivity. The blood pictures were similar in the two cases and the clinical pictures with petechiae and ecchymoses, involving both skin and mucous membrane, were also similar. In both cases, complete recovery occurred. The treatment of patient 1 was in the main that of shock, e. g., warmth, epinephrine, morphine, intravenous dextrose, and blood transfusions to combat further bleeding. In case 2, treatment was unnecessary and the recovery was entirely spontaneous. Needless to say, arsenicals of any kind are to be avoided in further antisyphilitic treatment of these patients.

The mechanism by which abnormal blood pictures are produced by injections of the arsphenamine derivatives is not clearly understood. Bedson<sup>4</sup> reported that experimentally an extensive, though temporary, reduction in the number of platelets in the circulatory blood did not give rise to purpura and presented evidence to show that the main factors concerned were (a) a toxic action on the endothelium of the vessels and (b) the removal of the platelets from the circulation.

There are a number of workers who attribute the disturbance in hematopoietic function directly to the toxic effects on the bone marrow of the benzene and arsenic components of the arsphenamines, and the prevailing opinion is that the benzene radical is the more responsible of the two. Jui-Wu-Mu<sup>5</sup> reported an immediate reduction of platelets in from ten to thirty minutes in normal individuals after the first injection of neoarsphenamine, but in none of his patients did a hemorrhagic state develop. Other observers believe that an allergic factor may play a part, their evidence

#### Blood Sugar Determinations in Case 2

Fasting	108 mg	per hundred cubic centimeters
½ hour	139 mg	per hundred cubic centimeters
1 hour	127 mg	per hundred cubic centimeters
1½ hours	115 mg	per hundred cubic centimeters
2 hours	110 mg	per hundred cubic centimeters

felt and percussed about 1.5 cm below the costal margin on the right and 1 cm in the midline. The spleen, palpable 2.5 cm below the costal margin, seemed firm, easily movable and rather elongated. The kidneys were not felt. The joints were freely movable without enlargement, tenderness or increased heat. The reflexes were normal.

Laboratory examination at the time of admission disclosed red blood cells, 4,290,000, hemoglobin, 80 per cent with color index of 1.0, white blood cells, 7,000, with a normal differential count of 67 per cent polymorphonuclears and 31 per cent lymphocytes. The blood smears showed that the red cells stained well without central achromia, anisocytosis or poikilocytosis. The platelets were markedly diminished, the platelet count being 180,000. The bleeding time (filter paper method) was five minutes, the clotting time (capillary tube method), ten minutes (normal, six minutes). Examination of the urine was negative except for a strongly positive urobilin. A tuberculin test of 0.1 mg was negative.

The patient remained in the hospital for eight days. He was afebrile on admission and remained so during his stay. The oral bleeding stopped within thirty-six hours and did not recommence. Since there were no further purpuric manifestations, transfusion seemed unnecessary. On the sixth day after admission the hemoglobin was still 80 per cent, bleeding time twenty minutes and clotting time ten minutes, platelet count, 150,000. On the day of discharge (the eighth day after admission) the bleeding time was ten minutes.

There has been much discussion as to the possibility of liver damage. The enlargement of the liver and the presence of urobilin in the urine on admission was regarded as suggestive of liver injury. However, it seemed more probable that the urobilin could be attributed to the absorption of the ecchymoses, of which the one on the buttock was very large. A van den Bergh test was not done because of the possibility of extravasation following venipuncture. A test of liver function was performed on the day of discharge. Levulose, 1 Gm per kilogram, was given by mouth.

<sup>4</sup> Bedson, S. P. Blood Platelet Antiserum Its Specificity and Role in the Experimental Production of Purpura, *J. Path. & Bact.* 26: 94 (Jan.) 1922.  
<sup>5</sup> Jui-Wu-Mu. Effects of Neoarsphenamine on the Number of Blood Platelets. *Proc. Soc. Exper. Biol. & Med.* 26: 407 (March) 1929.

seems to lie in the fact that in the reported cases the blood dyscrasia has developed only after repeated injections of the arsphenamines. If a "specific sensitivity" phenomenon is involved, it differs from that ordinarily observed in arsphenamine dermatitis in that a gradually cumulative process of "sensitivity" must be postulated. In order to bridge the obvious gaps in the mechanism, Loveman and others assume a "syphilitic" factor. One can only raise the question why the phenomenon should occur so rarely in cases of florid syphilis, if a toxic element of the syphilitic infection itself is responsible.

No conclusive evidence seems available at present to decide the etiology of postarsphenamine blood dyscrasias in syphilitic patients. Our purpose here is to add two cases to the literature, so that eventually sufficient data may be studied to aid in the final solution of the problem.

### CLINICAL EVALUATION OF THE GALACTOSE TOLERANCE TEST

BENJAMIN M. BANKS, M.D.

PERCY H. SPRAGUE, M.D.  
Fellow in Medicine the Mayo Foundation

AND

ALBERT M. SNELL, M.D.  
ROCHESTER, MINN.

Since the introduction by Bauer<sup>1</sup> in 1906 of the galactose test as a method of determining hepatic function, there has been considerable difference of opinion among competent observers as to its practical value. The metabolism of this sugar has been studied intensively, both in this country and abroad, but its application to clinical material received only scanty consideration here until the appearance of the contribution of Shay, Schloss and Bell.<sup>2</sup> These authors have given an excellent review of the literature and have outlined the clinical application of the test. They have pointed out the many advantages of galactose as a test substance: (1) its availability in pure form, with freedom from associated gastro-intestinal upsets following its administration, (2) its prompt assimilation from the alimentary canal unchanged and its conversion into glycogen in the liver, (3) the apparent inability of the remainder of the organism to utilize or store galactose as such, and (4) its lack of a renal threshold characteristic.

As is generally known, clinical application of the test is based on the fact that the normal fasting person, after ingestion of 40 Gm of galactose, will utilize nearly all of this amount and excrete up to a total of 3 Gm in the urine in five hours. It has been thought that an output exceeding this arbitrary limit of 3 Gm (a positive test) indicates diffuse parenchymal hepatic injury such as seen in "intrahepatic" jaundice. In obstructive jaundice it has been felt that the hepatic parenchyma retains its ability to metabolize galactose, and if this is true, excretion of less than 3 Gm (a negative test) should prevail in the presence of this condition. Basing their argument on these assumptions,

Shay and Schloss<sup>3</sup> concluded that the galactose test "is a simple, ready means of identifying a clinically difficult group of cases, namely, the toxic or infectious jaundice group, and of separating it from the obstructive type." This view has recently been restated by Bauer,<sup>4</sup> the originator of the test, in addition, he has expressed the belief that the galactose tolerance test furnishes a more or less direct measurement of the severity of hepatic injury. During the last eighteen months this test has been used at the Mayo Clinic as a routine in various types of jaundice in patients who were hospitalized. This affords an opportunity to evaluate its diagnostic accuracy.

In reporting our results we have selected those cases of obstructive jaundice in which diagnosis has been confirmed by operation, necropsy, or both. Of cases of intrahepatic jaundice we have included only those in which the patients gave definite histories of taking hepatotoxic drugs or in which the clinical picture of epidemic or catarrhal jaundice was present. In addition, the clinical course in these last mentioned cases, as well as follow-up studies for six months made the clinical diagnosis reasonably certain. Among the patients with metastatic hepatic malignant conditions, three who later died elsewhere are included, in these cases the diagnosis was obvious, as was evidenced by a palpable, nodular liver and rectal implants. A group of persons who were not jaundiced but who had miscellaneous diseases of the biliary tract and liver and who had been subjected to the bromsulphalein test of hepatic function was also investigated by this method. This selected group of cases numbered 127 in all and our experience with these cases forms the basis of this communication.

The technic of the test followed in this study is essentially identical with that outlined by Shay and Schloss. After an overnight fast the patient empties his bladder, this specimen being saved as a control. He then drinks a solution of 40 Gm of galactose in 500 cc of water flavored with a few drops of lemon juice. Thereafter the patient may drink water freely. Specimens of urine from the resting patient are collected hourly during the next five hours, and each is placed in a separate container appropriately labeled. At the conclusion of the five hours, each specimen is tested with the Benedict qualitative reagent for reducing substances. Those samples which give positive tests are mixed, and the total reducing substance is determined by the quantitative method of Benedict. The results are expressed as grams of total reducing substance. The same two trained technicians have performed all the tests. Specimens of urine of diabetic patients have been checked by standard fermentation methods to rule out glycosuria.

#### INTRAHEPATIC JAUNDICE (TOXIC OR INFECTIOUS)

*Acute and Subacute Types*—The eighteen patients who comprise this group (table 1) are of particular interest in view of the difficulty and necessity of accurate differential diagnosis between the condition they represent and painless obstructive jaundice, especially that caused by obstruction of the bile ducts by malignant processes. That age is an unreliable guide to diagnosis is shown by the fact that a third of this

From the Division of Medicine, the Mayo Clinic.

1. Bauer, Richard. Ueber die Assimilation von Galaktose und Milchzucker beim Gesunden und Kranken. *Wien med. Wchnschr.* 56: 20-23, 1906.

2. Shay, Harry; Schloss, E. M. and Bell, M. A. The Metabolism of Galactose. I. Considerations Underlying the Use of Galactose in Tests of Function of Liver. *Arch. Int. Med.* 47: 391-402 (March) 1931.

3. Shay, Harry and Schloss, Eugene. Painless Jaundice. Its Differential Diagnosis by Galactose Tolerance Test. *J. A. M. A.* 98: 1433-1436 (April 23) 1932.

4. Bauer, Richard. Unsere Kenntnisse über Leberfunktion und ihre Verwertung für die Klinik. *Wien klin. Wchnschr.* 45: 1577-1581 (Dec. 23) 1932.

group of patients were more than 50 years of age. With the exception of only three cases, excretion of galactose on at least one occasion during the period of hospitalization was 3 Gm or more. In some of these cases repeated determinations were made and interesting variations in galactose tolerance were observed, as shown in the chart. Shav and his co-workers have

posed on the more chronic one. Our observations in this group agree in a general way with those recently published by Bauer.

#### OBSTRUCTIVE JAUNDICE

*Carcinoma of Pancreas and Bile Ducts, Metastatic Carcinoma of Liver*—Of twenty proved cases of carcinoma of the head of the pancreas or ampulla of Vater, with jaundice ranging in duration from three days to six months, there were nine in which galactose tests were positive (table 3). There was no constant relationship between the duration and depth of the jaundice and the amount of galactose excreted, nor could the test be regarded as of great prognostic significance. It is a remarkable fact that in case 55 as the patient approached the stage of terminal hepatic insufficiency, with increased drowsiness, purpura, and rising values for serum bilirubin and blood urea, the tolerance for galactose improved, so that the successive tests disclosed decrease in excretion of galactose from 4.60 to 2.18 Gm.

In the ten cases of primary neoplasm of the common or hepatic ducts (table 3), the jaundice was fairly acute, averaging two weeks in duration. Five patients in this group gave positive tests on at least one occasion. Again, no prognostic significance could be attached to the results of the test. Patients 40 and 48, who presented positive galactose tests, died from postoperative hepatic insufficiency, as did patients 41 and 47, who had previously had normal tolerance for galactose.

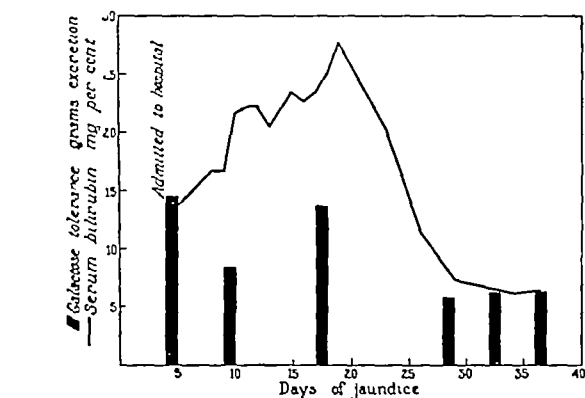
TABLE 1—Acute and Subacute Intrahepatic Jaundice

Case	Age Years	Sex*	Etiology	Duration of Jaun- dice	Serum Bilirubin†	Galactose Toler- ance‡
1	45	♂	Cinchophen	4 days	27.8 to 5.0	14.50 8.34 13.47 4.75 4.70
2	61	♂	Cinchophen	8 days	17.8 to 3.8	5.10 5.00 2.15
3	64	♂	Cinchophen	12 days	27.0 to 6.0	1.90 2.04 3.03 2.88 4.91
4	61	♀	Cinchophen	14 days	50.0 to 3.1	2.77 3.40 1.59
5	30	♀	Cinchophen	30 days	7.1 to 4.5	3.05
6	31	♀	Epidemic (catarrhal)	7 days	5.5 to 2.5	1.80 4.53 2.89
7	46	♂	Epidemic (catarrhal)	10 days	7.0 to 2.4	6.36 4.69 4.73
8	56	♂	Unknown	5 days	6.3 to 2.4	4.09
9	52	♂	Unknown	3 weeks	10.7 to 4.0	2.91
10	60	♂	Unknown	3 weeks	12.1 to 5.7	5.40 6.61 2.88
11	38	♂	Unknown	3 weeks	18.5 to 3.3	3.76 3.00 3.16
12	29	♀	Unknown	6 weeks	15.0 to 3.3	2.07 3.90 1.30
13	42	♂	Unknown	6 weeks	20.0 to 3.0	0
14	33	♂	Unknown	9 weeks	25.0 to 1.5	
15	29	♂	Unknown	4 months	3.57 to 3.06	
16	32	♂	Arsphenamine	2 weeks	18.8 to 7.9	
17	38	♂	Arsphenamine	4 weeks	2.3 to 1.0	
18	33	♂	Sulpharsphen- amine	3 months	19.0 to 1.0	

\* In the tables ♂ denotes male, ♀ female.

† Range during period of hospitalization, milligrams in each 100 cc.

‡ Grams excreted in urine in five hours.



Variations in galactose tolerance and value for serum bilirubin in a case of intrahepatic jaundice

also noted a rise and fall in total galactose output, corresponding apparently to progression and recession of the disease. During the early stages of certain mild cases a negative test may be present, and on repetition the excretion of reducing substances may never rise above the arbitrary upper normal limit of 3 Gm.

Case 18 (table 1), in which there was jaundice of three months' duration following sulpharsphenamine, obviously must be included in this group as an example of subacute hepatic parenchymal injury. Excretion of galactose of 1.3 Gm is a reflection of extensive hepatic regeneration during that period, as evidenced also by the marked decline to normal limits in value for serum bilirubin while the patient was under observation.

It is clear from examination of table 1 that in acute and subacute intrahepatic jaundice the test, although usually reliable, is not infallible. However, its value as additional evidence when correlated with the usual clinical and laboratory observations is exemplified by case 10, in which a diagnosis of obstructive jaundice had been made. Operation was postponed when the galactose tolerance test was reported as positive, with excretion of 6.36 Gm of reducing substances in the urine. The jaundice subsided gradually thereafter, the patient's general condition improved, and on reexamination six months later he was found to be in excellent health.

*Chronic Types*—In contrast to the preceding series the patients now to be considered, who for the most part had various types of portal and biliary cirrhosis, had consistently normal galactose tolerance, with excretion usually between 2 and 3 Gm (table 2). From the histories and physical examinations it is apparent that the underlying processes of hepatic destruction and repair had been active for many months before jaundice actually supervened, and the presence of newly regenerated hepatic tissue may thus explain the normal utilization of galactose by these patients. It is noteworthy that in two instances (cases 20 and 22) increased excretion of galactose fell to normal values as the patients recovered from brief episodes of jaundice. Transient increases of bilirubinemia in this type of case obviously suggest an acute process superim-

posed on the more chronic one. Our observations in this group agree in a general way with those recently published by Bauer.

carcinomatosis of the liver as seen at necropsy suggests that the usual mechanism of jaundice under these conditions is a blocking of intrahepatic or external biliary ducts by metastatic nodules or involved lymph nodes. Three of these seven patients excreted galactose in excess of 3 Gm. This is contrary to Bauer's experience, he has recently stated that a metastatic malignant condition of the liver rarely produces any significant change in galactose tolerance. This statement probably applied to nonjaundiced patients with such a condition, but in cases of proved metastatic malignancy and jaundice positive galactose tests are not uncommon in our experience.

In a total, therefore, of thirty-seven proved cases of jaundice secondary to malignant disease, obstructing the bile passages or metastasizing to the liver, or both, positive galactose tests were obtained in seventeen (46 per cent).

*Cholelithiasis, Cholecystitis with Stones and Associated Hepatic Lesions. Stricture of the Common or Hepatic Ducts*—There were twenty-two cases of obstructive jaundice caused by stone in the common

the common or hepatic ducts at operation (table 4), although the patients were jaundiced at the time. All of these patients were found, however, to have serious degrees of hepatitis or cholangitis. In three cases excretion of galactose was normal, of the two patients who presented positive tests, one (85) was described as having an atrophic and cirrhotic liver and the other (87) was found to have a maximal degree of hepatitis and cholangitis. The former patient made a good recovery after operation, but the latter died with symptoms of hepatic insufficiency and hemorrhage. The three patients with negative galactose tests had uneventful convalescence, in spite of the undoubted presence of hepatic cellular injury.

In cases of stricture of the common or hepatic ducts the antecedent history of chronic disease of the biliary tract, and the tendency of the biliary obstruction to be of long standing, persistent, and practically complete, would predicate the existence of a more advanced form of parenchymal hepatic injury than that which usually follows other types of mechanical occlusion of the bile passages. In eleven cases in which plastic

TABLE 2—Chronic Intrahepatic Jaundice

Case	Age Years	Sex	Diagnosis	Duration of Jaundice	Serum Bilirubin*	Galactose Tolerance†	Comment
19	49	♂	Cirrhosis with ascites and jaundice	1 week	6.3 to 10.7	2.85	Marked alcoholism; ascites for three months prior to admission; rising serum bilirubin curve
20	33	♂	Alcoholic cirrhosis with jaundice	1 week	5.6 to 1.5	3.12 4.84 2.98	Extreme alcoholism; liver greatly enlarged; fluctuating serum bilirubin curve
21	30	♂	Splenohepatic disease Banti's syndrome (?)	10 days	12.5 to 1.6	2.01	Marked alcoholism; fluctuating serum bilirubin curve; splenectomy; liver moderately en- larged and cirrhotic; surface diffusely nodular
22	51	♂	Cirrhosis with ascites and jaundice	2 weeks	16.7 to 4.8	3.10 1.80	Marked ascites for one month prior to admis- sion; falling serum bilirubin curve
23	45	♂	Cirrhosis with ascites and jaundice	2 months	5.4 to 2.9	2.37	Marked alcoholism; enlarged liver and spleen; ascites
24	24	♂	Biliary cirrhosis with splenomegaly	3 months	8.3 to 7.1	2.27	Moderate ascites and collateral circulation; report of death two months later
25	60	♂	Cirrhosis with ascites and jaundice	6 months	5.2 to 3.3	2.85	Ascites six months prior to admission
26	18	♂	Portal cirrhosis	6 months	3.6 to 2.4	2.00	Blood including fragility of erythrocytes normal
27	26	♂	Biliary cirrhosis with splenomegaly	5½ months	7.1 to 6.5	2.18	Markedly enlarged liver and spleen
28	51	♀	Cirrhosis with ascites and jaundice	9 months	3.9 to 10.0	2.74	Ascites two months prior to admission; fluctu- ating serum bilirubin curve; Talmi-Morison operation done
29	40	♀	Infectious biliary cirrhosis	14 months	4.3 to 5.8	2.62	Operation at onset of jaundice; diagnosis made and T tube inserted in common bile duct
30	54	♂	Cirrhosis with ascites and jaundice	10 months	8.8 to 6.3	2.00	
31	51	♀	Biliary cirrhosis with splenomegaly	24 months	6.8 to 6.0	2.80	Hepatic biopsy seven years previously; at operation for chronic cholecystitis disclosed biliary cirrhosis

\* Range during period of hospitalization; milligrams in each 100 cc.

† Grams excreted in urine in five hours.

bile duct (table 4). In each case, notes made at operation or necropsy, concerning the color of the bile and the appearance and condition of the liver, were available. In six cases in which jaundice was present from ten days to many months, excretion of galactose exceeded 3 Gm. No apparent correlation existed between the degree of hepatic injury noted by the surgeon and the total excretion of galactose, nor could one prophesy from the results of the tests either the type of postoperative convalescence or the probability of fatal outcome. Thus, three patients (64, 67 and 71) with negative tests had definite postoperative hepatic insufficiency, and one died, of the six patients with positive tests, only one failed to survive operation. Postoperative hemorrhage occurred with approximately equal frequency in cases with positive and in cases with negative tests.

There were five cases of cholecystitis with stones in which calculous material could not be demonstrated in

repair for stricture of the common or hepatic ducts was carried out (table 4), moderate to extreme degrees of biliary cirrhosis and cholangitis were actually present, in all, at operation or necropsy. Four of these eleven patients gave positive galactose tests. Two of the four patients had uneventful convalescence, whereas the remaining two failed to survive.

It is noteworthy that both in cases 93 and 94, despite negative galactose tolerance tests, "white bile" was found at operation. The postoperative course was characterized by signs of hepatic insufficiency in both cases and by marked hemorrhagic tendency in one.

A remarkable example of residual obstructive biliary cirrhosis secondary to stricture of the common bile duct was observed in one case (99). A strongly positive galactose test (15 Gm excreted in five hours) was obtained shortly before death. At necropsy the terminal picture of hepatic insufficiency was presented with jaundice, ascites, and gastro-intestinal hemorrhage.

Extensive cirrhotic changes were noted in the liver, with nodular hyperplasia and a marked degree of fibrosis, the pathologic picture, in fact, closely resembled that of advanced alcoholic cirrhosis

Our experience with the galactose test in the thirty-eight cases (table 4) of jaundice due to choledocholithiasis, stricture, and cholecystitis with hepatitis and cholangitis may be summarized by the statement that positive tests were obtained in a third of the cases. This percentage is not significantly altered by excluding

TABLE 3—*Carcinoma of Ampulla of Vater Head of Pancreas and Common or Hepatic Ducts*

Cn	Age	Sex	Situation*	Duration of Jaundice	Serum Bilirubin†	Galactose Tolerance‡
22	77	♂	Head of pancreas	3 days	10.0 to 18.9	2.00
33	51	♂	Hepatic ducts	Few days	6.5 to 10.0	2.55
34	70	♂	Common bile duct	4 days	4.1 to 15.0	4.46
						3.82
3	76	♀	Common bile duct	1 week	2.7	0
36	60	♂	Head of pancreas	1 week	11.0 to 16.0	3.43
						5.23
37	57	♂	Head of pancreas	1 week	7.9 to 23.4	1.70
38	68	♂	Common bile duct	10 days	20.8 to 5.2	3.20
						2.50
39	60	♀	Hepatic ducts	2 weeks	8.6 to 7.5	2.00
40	66	♀	Common bile duct	2 weeks	25.9 to 30.0	5.64
41	67	♀	Common bile duct	2 weeks	30.0 to 13.6	2.77
42	60	♀	Head of pancreas	2 weeks	10.3 to 21.4	0
43	63	♀	Head of pancreas	2 weeks	13.6 to 15.0	3.33
44	69	♀	Head of pancreas	2 weeks	10.0 to 25.0	2.50
45	67	♀	Ampulla of Vater	2 weeks	8.3 to 20.0	4.21
46	60	♀	Ampulla of Vater	3 weeks	5.4 to 20.0	3.00
					16.7 to 30.0	7.60
						3.47
47	64	♂	Hepatic duct	8 weeks	26.8 to 10.7	1.68
						2.80
						1.58
48	68	♀	Hepatic duct	4 weeks	21.4 to 16.7	3.20
49	67	♀	Head of pancreas	4 weeks	20.0 to 27.0	1.00
50	50	♀	Head of pancreas	4 weeks	8.8 to 20.0	5.76
51	56	♀	Head of pancreas	4 weeks	10.7 to 20.0	3.77
52	64	♀	Head of pancreas	5 weeks	5.8 to 13.6	2.47
53	59	♀	Head of pancreas	6 weeks	12.5 to 21.4	2.00
54	57	♀	Head of pancreas	6 weeks	18.8 to 30.0	4.60
55	48	♀	Head of pancreas	6 weeks	30.0 to 60.0	4.60
						3.90
						2.18
56	30	♂	Head of pancreas	2 months	15.0	4.20
57	60	♀	Common bile duct	2 months	5.6	4.27
58	72	♀	Head of pancreas	10 weeks	2.1 to 5.8	2.40
59	63	♀	Head of pancreas	3 months	2.0 to 8.8	1.07
60	48	♀	Ampulla of Vater	5 months	8.5 to 11.5	0.05
61	48	♀	Head of pancreas	6 months	7.5 to 12.5	1.30

\* Based on operation necropsy or both

† Range (in milligrams in each 100 cc) during period of hospitalization

‡ Grams excreted in urine in five hours

§ Two admissions at interval of one year

the five cases of cholecystitis, cholelithiasis and hepatitis, in which the common bile duct was patent at the time of operation

#### PATIENTS WITHOUT JAUNDICE

Our experience with the test on normal control subjects coincides with the results of numerous investigators and confirms the upper limit of excretion of galactose under the conditions of the test as 3 Gm. Numerous tables appear in the literature rendering inclusion of our own data on this point unnecessary. The contention of Rowe<sup>5</sup> that galactose tolerance, as determined by his own experimental technic, varies with sex apparently does not affect the uniform clinical application of the test to jaundiced patients of both sexes.

In a miscellaneous group of twenty-one cases of disease of the biliary tract and liver, the results of the galactose test were compared with the bromsulphalein test of hepatic function. Not one of these patients was jaundiced at the time either test was performed. The dye test gave positive results in fifteen cases, but in only two cases was the galactose test positive and in

these the deviation from normal was slight. In several cases of this group, extensive hepatic lesions were noted at operation or at necropsy, and in these the bromsulphalein test was uniformly positive, although excretion of galactose was within normal limits. In one case the hepatic substance was almost entirely replaced by a bile duct type of primary hepatic carcinoma, retention of dye was graded 4, whereas excretion of galactose was normal, 1.62 Gm. It is apparent from these cases that a determination of galactose tolerance may be of little, if any, clinical value in hepatic disease not associated with jaundice.

#### COMMENT

In considering the applicability of the galactose test to clinical material, it is worth while to review some of the more recent experimental evidence on the subject. Bollman, Power and Mann<sup>6</sup> have shown that only 80 per cent of galactose may be recovered from the urine of the hepatectomized animal after intravenous injection. Also, if the equivalent dosage of this sugar is given orally to hepatectomized dogs, there is somewhat greater loss, which may be due to oxidation in the muscular tissues of the animal. This phenomenon may be explained on the basis of relatively slow absorption of galactose from the digestive tract. These workers also showed that there were marked variations in the absorption and excretion of galactose in normal dogs and in those with experimental cirrhosis. They concluded, however, that galactose is theoretically the sugar of choice for the testing of carbohydrate metabolism in hepatic disease.

Certain inherent pitfalls in conducting the clinical tests make a rigorous technic necessary. Vomiting and diarrhea are obvious causes of faulty absorption, but gastric stasis, whether functional from reflex causes, or mechanical, as in malignant conditions of the upper part of the digestive tract, is a less obvious cause of malabsorption. In aspiration of gastric content performed at the end of the five-hour period it was by no means rare to recover considerable amounts of the test sugar, thus invalidating to some extent the test in question. The delay in absorption secondary to the retarded circulation present in certain types of chronic hepatic disease may also be of some significance. In addition to defective absorption, faulty excretion of the sugar due to renal and vesical factors may introduce appreciable errors. Oliguria, whether caused by dehydration or by acute renal injury associated with the primary hepatic disease, will result in an unreliable low output of galactose. Functional retention of urine in the bladder, and residual urine in the presence of a hypertrophied prostate gland may also mask a positive test.

Various metabolic factors, at present still controversial and confusing, may serve in a nonspecific way to vitiate the test. Particularly in dehydration and starvation, as well as in febrile conditions, the results should be interpreted with caution. Standards of normal presuppose an adequate carbohydrate reserve. The studies of Shay, Schloss and Bell and of Roe and Schwartzman<sup>7</sup> tend to indicate that excretion of galactose in the urine of diabetic patients is comparable with that of normal persons, however, the latter investigators noted in dealing with diabetic patients an average increase

6 Bollman J I, Power M H, and Mann F C. The Relation of the Liver to the Metabolism of Galactose. *Proc Staff Meet Mayo Clin.* 6: 724-725 (Dec. 9) 1931.

7 Roe J H and Schwartzman A S. Galactose Tolerance of Normal and Diabetic Subjects and Effect of Insulin upon Galactose Metabolism. *J Biol Chem* 96: 717-735 (June) 1932.

in fermentable (dextrose) blood sugar of 40 mg in each 100 cc during the period of the test. In view of the general knowledge as "summation of effects of glycosuric tendencies," it is advisable to perform fer-

glycosuria or actual diabetes, patients with thyrotoxic states may well be included in the group of cases in which galactose tests are to be interpreted with particular care.

TABLE 4—Nonmalignant Obstructive Jaundice

Case	Age years	Sex	Diagnosis*	Duration of Jaundice	Serum Bilirubin†	Galactose Tolerance‡	Comment
62	37	♀	Stone in common bile duct hepatitis cholangitis pancreatitis	4 days	10.7 to 7.1	1.07	Stormy postoperative convalescence
63	55	♀	Stone in common bile duct hepatitis graded 4	10 days	13.6 to 10.5	3.10	White bile noted at operation
64	43	♂	Stone in common bile duct hepatitis graded 4	10 days	21.4 to 2.7	0	Postoperative hepatic insufficiency stormy convalescence
65	40	♀	Stone in common bile duct suppurative cholangitis	2 weeks	10.0 to 3.0	4.70	Good postoperative convalescence
66	68	♂	Stone in common bile duct chronic hepatitis graded 4 chronic pan- creatitis graded 4	3 weeks	3.0 to 2.6	5.12	Fifteen year history of biliary colic good postoperative convalescence
67	61	♂	Stone in common bile duct hepatitis graded 3	3 weeks	11.5 to 7.9	2.72	Died of hepatic insufficiency postopera- tively with hemorrhagic tendency
68	49	♀	Stone in common bile duct suppu- rative cholangitis	3 weeks	11.5 to 18.5	2.82	Fifteen year history of biliary colic and jaundice good postoperative conva- lescence
69	47	♀	Stone in common bile duct purulent cholangitis	3 weeks	10.7 to 3.2	2.00	Marked cholangitis good postoperative convalescence
70	46	♀	Stone in common bile duct	2 months	15.8 to 41.8	0	No operation died of hepatic insufficiency with marked hemorrhagic features
71	46	♀	Stone in common bile duct hepatitis graded 3 purulent cholangitis	2 months	0.4 to 1.3	0	White bile noted at operation postopera- tive hepatic insufficiency stormy convalescence
72	47	♂	Stone in common bile duct	2 months	3.8 to 1.3	0.00	Good postoperative convalescence
73	32	♀	Stone in common bile duct atrophic biliary cirrhosis, graded 3	9 weeks	10.7 to 5.6	0	Purpura tendencies before operation good postoperative convalescence
74	49	♀	Stone in common bile duct suppu- rative cholangitis	3 months	15.0 to 11.5	2.43	Good postoperative convalescence
75	65	♂	Stone in common bile duct subhepatic abscess	3 months	2.0 to 1.6	1.32	Good postoperative convalescence
76	33	♀	Stone in common bile duct biliary cir- rhosis graded 2	3 months	8.3 to 1.8	1.00	Good postoperative convalescence
77	56	♂	Stone in common bile duct biliary cir- rhosis graded 3	4 months	11.5 to 3.4	3.20	Good postoperative convalescence
78	52	♂	Stone in common bile duct biliary cir- rhosis graded 2	5 months	5.6 to 3.1	2.34	Good postoperative convalescence
79	62	♀	Stone in common bile duct cholangitis	6 months	16.8 to 5.2	3.20	Died of hepatic insufficiency and postoper- ative hemorrhage
80	53	♂	Stone in common bile duct carcinoma of gallbladder	6 months	10.7 to 10.0	0	No operation died of hepatic insufficiency
81	65	♀	Stone in common bile duct cirrhosis, graded 3	9 months	11.5 to 0.4	0.66	Good postoperative convalescence
82	67	♂	Stone in common bile duct	Several years inter- mittently	2.5 to 1.5	4.08	Good postoperative convalescence
83	52	♀	Stone in common bile duct biliary cir- rhosis graded 2	Several years inter- mittently	4.7 to 3.8	1.93	Good postoperative convalescence
84	42	♂	Cholecystitis with stones hepatitis graded 2	7 days	3.7 to 1.7	2.49	Good postoperative convalescence
85	66	♂	Cholecystitis with stones atrophic bil- iary cirrhosis	7 days	10.7 to 4.3	3.40	Good postoperative convalescence
86	58	♀	Cholecystitis with stones hepatitis graded 3 pancreatitis, graded 4	4 weeks	4.0 to 2.0	2.03	Good postoperative convalescence
87	49	♂	Cholecystitis with stones hepatitis graded 4 pancreatitis graded 4	5 weeks	21.4 to 30.0	3.75	Died of hepatic insufficiency and multiple hemorrhages
88	76	♂	Cholecystitis with stones biliary cir- rhosis graded 4 cholangitis	3 months	3.3 to 2.5	2.09	Good postoperative convalescence
89	34	♂	Stricture of common bile duct	2 days	2.17 to 2.01	1.80	Good recovery
90	51	♀	Stricture of common bile duct biliary cirrhosis graded 2	3 weeks	3.3 to 2.6	2.50	Good recovery
91	50	♀	Stricture of common bile duct biliary cirrhosis graded 3	2 months	13.2 to 1.2	3.48	Mild diabetic history on routine urinalysis always sugar free good recovery
92	66	♀	Stricture of common bile duct	2 months	12.5 to 7.5	1.80	Good recovery
93	43	♀	Complete division of common bile duct	4 months	10.7 to 0.7	0	White bile noted at operation stormy convalescence
94	44	♀	Stricture of common bile duct	4 months	10.7 to 10.7	1.60 0	White bile noted at operation stormy convalescence hepatic insufficiency and hemorrhage
95	61	♂	Stricture of common bile duct biliary cirrhosis graded 2 cholangitis	1 year	4.41 to 4.16	1.61	Repeated plastic operations on common bile duct good recovery
96	35	♀	Stricture of common bile duct and hepatic ducts	1½ years	8.6 to 6.0	3.65	Died few hours postoperatively
97	41	♀	Stricture of common bile duct	2 years	4.25 to 1.5	3.24	Repeated plastic operations on common bile duct in last two years good recovery
98	48	♂	Stricture of common bile duct biliary cirrhosis	2 years	21.4 to 4.7	2.71	Died of hemorrhage postoperatively
99	36	♀	Stricture of common bile duct biliary cirrhosis cholangitis	10 years intermittently	7.5 to 7.7	10.1	Died of hepatic insufficiency and hemorrhages

\* Based on operation necropsy, or both grading where noted based on 1 to 4

† Range during period of hospitalization milligrams in each 100 cc.

‡ Grams excreted in urine in five hours

mentation tests on the urine of all patients with frank diabetes or with diabetic dextrose tolerance curves, regardless of whether the fasting subject has glycosuria or not. Readings of the fasting blood sugar and dextrose tolerance tests may also be indicated in exceptional cases. Because of their tendency to alimentary

In a considerable number of the cases studied, intravenous injections of a 10 per cent solution of dextrose were given daily as a preparation for surgical treatment. The question has been raised as to whether one or many such injections would vitiate a galactose tolerance test done on a subsequent day. It has been repeatedly noted

(Allen<sup>8</sup> and Folin and Berglund<sup>9</sup>) that the utilization of any sugar is modified when another assimilable sugar is given simultaneously by the same or a different route. This objection does not hold in this instance, however, since the injections of dextrose were completed at least twenty hours before the galactose was administered. On hypothetical grounds it would seem that previous, or even simultaneous, administration of dextrose should increase the hepatic glycogen and improve hepatic function, thus serving to reduce the excretion of galactose. The experiments of Bloch and Weisz<sup>10</sup> appear to substantiate this view, and those of Corley<sup>11</sup> are not contradictory. In experimental animals with obstructive jaundice, Millet<sup>12</sup> also has shown that repeated preliminary injections of dextrose may increase the galactose tolerance rather than decrease it. On this basis it would seem that a previous injection of dextrose such as many of our patients received, would at least not tend to increase the number of positive tests but, if anything, would reduce their number.

The value of a test of hepatic function to both internist and surgeon is directly proportional to its accuracy in establishing or supporting a clinical diagnosis, in indicating, in medical cases, improvement or lack of it, in determining in cases under consideration for operation the degree of risk, and in predicting probable postoperative complication. Judged by these exacting standards, the merits of the galactose test may be questioned, indeed, it is doubtful whether any single test will ever fulfil these requirements.

In cases of acute intrahepatic jaundice of average severity, a positive galactose test is almost the rule. A negative test may occur in the presence of nonobstructive jaundice either in mild or convalescent cases, or in cases of long standing, and does not necessarily militate against the diagnosis. However, positive tests occur with considerable frequency in the presence of obstructive jaundice of various types (from 32 to 46 per cent of all types in this series). As will be noted from the tables, most of these positive tests involve excretion of galactose of from 3 to 4 Gm. A more strongly positive test (excretion of 6 Gm or more of reducing substance) is more likely to indicate an intrahepatic type of jaundice and should be a serious deterrent against immediate surgical intervention. Either the condition is entirely intrahepatic, that is, not surgical, or preoperative treatment should be instituted to reduce the risk incidental to possible associated parenchymal hepatic injury.

In following the clinical course of patients with intrahepatic jaundice, the test undoubtedly has some definite prognostic value, especially when the value for serum bilirubin has become "fixed" and varies but little from day to day. Millet's studies on galactose tolerance of animals with experimental hepatic injury produced with carbon tetrachloride, diaminitoluene, or tetrachloroethane are in agreement with the foregoing observations. In his experience, acute, severe hepatic injury usually produces increased excretion of galactose, milder degrees of injury produce no appreciable change,

in the presence of chronic hepatic injury, the response to administration of galactose is variable. The presence of active hepatic regeneration apparently leads to negative tests, both under experimental conditions and in clinical cases even though the preceding hepatic injury has been extensive.

As we have stated, in the presence of obstructive jaundice, tests were positive in our series in from 46 (malignant) to 32 per cent (benign) of the cases. The tendency for the obstruction in cases of malignancy to be complete and persistent probably accounts for the higher percentage of positive tests in the malignant group, but the part played by biliary infection and biliary cirrhosis in cases of stone and stricture is probably not inconsiderable in affecting the excretion of galactose. The reasons for these deviations are apparent from pathologic studies. Counseller and McIndoe<sup>13</sup> have demonstrated the marked degree of hydrohepatosis, infection of the larger bile passages and biliary parietal sacculi and of injury to the hepatic parenchyma secondary to biliary obstruction or to interference with portal circulation. In nine of the nine cases of obstructive jaundice which came to necropsy the galactose test was positive, and there was apparently a sufficient amount of hepatic injury to explain the results. In the other cases, less extensive parenchymal injury was noted.

It is recognized that not infrequently in the liver a condition of degenerative change or actual atrophy may develop following obstruction to the outflow of bile, in such cases the galactose test would seem fully as likely to give a positive result as in pure types of intrahepatic jaundice. In other cases of obstruction the processes of regeneration and repair may follow closely in the wake of hepatic cellular destruction, and a negative galactose test may belie the extent of hepatic disorganization. In short, there are definite anatomic reasons why a galactose test may be misleading in the presence of obstructive jaundice, and it is no serious criticism of the test to say that its range of error in this condition may be considerable.

From a physiologic standpoint, studies on the character and composition of bile following surgical relief of biliary obstruction of long standing<sup>14</sup> further illustrate the functional inadequacy of the liver which may follow occlusions of the bile passages. As Millet has shown in the experimental animal, the excretion of galactose following ligation of the common bile duct varies considerably in different animals and in the same animal at different times. The individual tolerance to biliary obstruction varies widely both in the experimental and in the human subject, and the amount of hepatic parenchymal injury secondary to obstruction may likewise be extremely variable. No doubt these variations explain, to some extent at least, the inconstant results of galactose tolerance tests. As with all other functional studies applied to the liver, perfection is hardly to be expected, clinical data furnish a basis for diagnosis, laboratory data being chiefly of corroborative value. The galactose test may be of great assistance in deciding matters of diagnosis and treatment in certain cases, but in our opinion the possibility of considerable margin of error should be considered in the interpretation and clinical application of the test in

8. Allen F. M. *Studies Concerning Glycosuria and Diabetes*. Boston, W. M. Leonard 1913.

9. Folin Otto and Berglund Hilding. *Some New Observations and Interpretations with Reference to Transportation, Retention and Excretion of Carbohydrates*. *J. Biol. Chem.* 51: 213-273 (March) 1922.

10. Bloch Josef and Weisz Maria. *Erhöhung der Galaktosetoleranz bei Leberkranken durch Kohlehydratzufuhr*. *Ztschr. f. klin. Med.* 111: 71-87, 1929.

11. Corley R. C. *Factors in the Metabolism of Glucose. II. The Effect of Glucose and Galactose on the Disposal of Intravenously Administered Galactose in the Rabbit*. *J. Biol. Chem.* 74: 19-31 (July) 1927.

12. Millet R. F. Personal communication to the authors.

13. Counseller V. S. and McIndoe A. H. *Dilatation of the Bile Ducts (Hydrohepatosis)*. *Surg. Gynec. & Obst.* 43: 729-740 (Dec.) 1926.

14. Greene, C. H. Walters, Wailman and Fredrickson C. H. *The Composition of the Bile Following the Relief of Biliary Obstruction*. *J. Clin. Investigation* 9: 295-310 (Oct.) 1930.

every case, particularly if clinical data and the result of the test do not agree

## CONCLUSIONS

We feel that the galactose test does not uniformly distinguish between obstructive and toxic or infectious types of jaundice, although it may furnish valuable corroborative data in doubtful cases. In both intra-hepatic and obstructive types of jaundice strongly positive tests (excretion of 6 Gm or more) should be seriously regarded and, if excretion is consistently high, are probably indicative of serious injury to the hepatic structure. The borderline group of positive tests with excretion of only slightly more than 3 Gm of reducing substance, should not be regarded as conclusive evidence against the presence of mechanical biliary obstruction. The value of the test to the individual practitioner will depend on how carefully its results are weighed against time-honored clinical data and previous clinical experience with jaundiced patients.

## WEAKNESS AND FAILURE OF THE LEFT VENTRICLE WITHOUT FAILURE OF THE RIGHT VENTRICLE

## CLINICAL RECOGNITION

PAUL D WHITE, M.D.

BOSTON

In the practice of medicine today no more important condition is encountered or so often unrecognized as such as is weakness or congestive failure of the left ventricle without congestive failure of the right ventricle. I propose herewith to discuss as a definite clinical syndrome or entity features of left ventricular failure in man which permit its recognition and which demand appropriate treatment.

My interest in this condition has been aroused in the past ten years by the observation of frequent instances of congestive heart failure, by special studies of my own<sup>1</sup> by the writings of certain others, and by the astonishing fact that so little attention has been paid by the English speaking world either in practice or in writing to this state of congestive failure of the left ventricle without congestive failure of the right ventricle. There has been this neglect not only by the medical profession at large but also by many cardiologists and even by some of the leaders. Realization of the truth has been slowly penetrating my own mind largely as the result of the study of three conditions that have interested me because of their relative neglect in English literature. These conditions are (1) cardiac asthma<sup>2a</sup> (2) protodiastolic gallop rhythm<sup>3c</sup> and (3) pulsus alternans<sup>4b</sup>. To complete the clinical evidence of left ventricular weakness and failure that is available today one should add to the three features named four others which are also very important in the presence of heart strain (in particular, hypertension, coronary thrombosis, and aortic valvular disease) limited to the left ventricle. These four features are (4) cardiac dyspnea without engorgement of the systemic veins (5) diminished vital capacity without extracardiac

cause, (6) increase in the roentgen shadows of the lung hilus blood vessels, and (7) increasing accentuation of the pulmonary second sound. The four conditions just mentioned are also found with mitral stenosis and of course that lesion must be ruled out before these conditions in any given case can be considered as clear evidence of left ventricular failure.

## THE LITERATURE

The history of the study of left ventricular failure is a fascinating one. I have traced the concept back more than 100 years.

In the earliest books on the heart itself, beginning two centuries ago, there gradually grew up over a period of 100 years the definite conception of enlargement of the heart from strain of some sort. In 1728 Lancisi<sup>2</sup> wrote on aneurysm or enlargement both of the heart and of the arteries. Incidentally he described a new sign, namely engorgement and pulsation in the cervical veins due to transmission of pressure upward from a dilated right heart.

DeSenac,<sup>3</sup> in 1749 wrote of cases of cardiac enlargement with and without valvular disease and related asthma to some kinds of heart disease, he described among others a case of aortic stenosis with cardiac asthma and secondary dilatation of the right heart. Morgagni,<sup>4</sup> in 1760, continued the discussion of heart strain and resulting enlargement and cited several cases. In 1806 Corvisart discussed active and passive aneurysm of the heart, signifying hypertrophy and dilatation as active aneurysm and dilatation alone as passive aneurysm. Bertin<sup>5</sup> in 1811, introduced the terms concentric hypertrophy and eccentric hypertrophy to denote simple hypertrophy of a ventricle and hypertrophy with dilatation, respectively. But it was Hope<sup>6</sup> of Edinburgh and London who, so far as I have been able to find out, was the first clearly to point out that the left ventricle may weaken under some strain with resulting congestion of the lungs and secondary strain thereafter on the right ventricle. Hope also was the first clearly to describe cardiac asthma. His writings in 1832 are so vivid and so much to the point on these important conditions that I shall quote briefly from them now.

As an obstacle to the circulation operates on the heart in a retrograde direction the cavity situated immediately behind it is the first to suffer from its influence. Accordingly all the impediments seated in the aorta its mouth, or the arterial system, act primarily on the left ventricle which, being likewise exposed to the heaviest burden when the circulation is accelerated has to conflict against a greater variety of exciting causes of hypertrophy, than any other cavity of the heart. On this account therefore, as well as from the thickness of its parietes, it is subject to hypertrophy in a greater degree than any other.

So long as the left ventricle is capable of propelling its contents the corresponding auricle, being protected by its valve remains secure. Hence in a large majority of cases the auricle is perfectly exempt from disease while the ventricle is even enormously thickened and dilated. But when the distending pressure of the blood preponderates over the power of the ventricle, its contents from not being duly expelled constitute an obstacle to the transmission of the auricular blood. Hence the auricle becomes overdistended, and the obstruction may be prop

2 Lancisi, J. M. *De motu cordis et aneurysmatibus*. Rome J. M. Salvioni 1728.

3 de Senac, J. B. *Traité de la structure du coeur de son action et de ses maladies*. Paris Jacques Vincent 2 413 1749.

4 Morgagni, G. B. *De Sedibus et Causis Morborum*. Ex typog Remondiniana, Venice 1761 letters XVII and XVIII.

5 Corvisart, J. N. *Essai sur les maladies et les lésions organiques du coeur et des gros vaisseaux*. Paris Mignolet 1806.

6 Bertin *Mémoires Académie royale des sciences*. Paris 1811 quoted by Hope<sup>7</sup> p 177.

7 Hope James. *A Treatise on the Diseases of the Heart and Great Vessels*. London William Kidd 1832 pp 196 205 346 352 357.

Read before the Association of American Physicians, Washington, D. C. May 9 1933.

1 (a) Palmer R. S. and White P. D. The Clinical Significance of Cardiac Asthma. Review of Two Hundred and Fifty Cases, *J. A. M. A.* 92 431 (Feb. 9) 1929. (b) White P. D. Alternation of the Pulse. A Common Clinical Condition. *Am. J. M. Sc.* 150 82 1915. (c) The Clinical Significance of Gallop Rhythm. *Arch. Int. Med.* 41 1 (Jan.) 1928.

agated backward through the lungs to the right side of the heart and there occasion the same series of phenomena. When the obstruction thus becomes universal, as is frequently the case it may either happen that all the cavities are thickened or those only which from their conformation have the greatest predisposition to it.

The primary effect of universal obstruction of the lungs by engorgement is to produce edema of their cellular tissue and dyspnea whether the latter depends solely on the engorgement or partly also on spasm of the bronchi excited by the irritation of that congestion is difficult positively to determine though the latter is highly probable.

Asthma has been too much regarded as independent of disease of the heart. Long treatises have even been written upon it without ever mentioning disease of this organ as one of its causes. It is therefore, necessary to dwell a little on this subject not only for the purpose of showing the magnitude of the error, but of making the reader acquainted with all the habitudes and aspects of a complaint which is perhaps the most distressing in the whole catalogue of human maladies.

Asthma from disease of the heart often imitates the character of the other varieties and this perhaps for a very simple reason, that the lungs are in much the same state as in those varieties. Thus, it is *humid* when there is permanent engorgement of the lungs, causing copious seromucous effusion into the air vessels, as from contraction of the mitral valve. It is *dry* when the engorgement is only temporary as in cases of pure hypertrophy. It is *continued* when there is a permanent obstruction to the circulation and any of the varieties may be *convulsive* when the heart has sufficient power to palpitate violently. The worst cases of convulsive asthma from disease of the heart are those of hypertrophy with dilatation and a valvular or aortic obstruction.

I apprehend that whatever be the organic cause of asthma it requires for its production the superaddition of a state of the nervous system leading to spasmodic constriction of the bronchial tubes. In what this state consists we can no more say than why one female falls into hysteria and another does not on seeing a third laboring under that affection or why one lady 'dies of a rose in aromatic pain' while another prefers it to all other perfumes.

Mind you this was all written 101 years ago. If only I had read older medical works of this high standard earlier and more diligently I should have been spared much pondering and should have realized that we have been gradually rediscovering some old ideas about left ventricular strain and about the probable mechanism of cardiac asthma though on sounder foundation of course than it was once possible to build. It is astonishing that with the passage of time Hope's teachings were neglected. Already within thirty years of Hope's book one finds that Stokes<sup>8</sup> has hardly a word to say on these points and after him right up to the present day most of the foremost English works on the heart in succession are strangely silent on this very important subject. There is usually in these books ample discussion of increased pressure and congestion of the systemic veins in heart failure but little or nothing about a similar state of congestion of the veins in the lungs due to failure of the left ventricle which is an early and common and often amenable functional disturbance at least as important (and probably more important) to recognize as is failure of the whole heart or of the right ventricle alone. Dyspnea is universally acknowledged to be a common early symptom of heart failure or usually stated to be the first evidence of such failure even before there is any sign of increased pressure in the systemic veins but its true significance and its pathogenesis are too often passed by and cardiac asthma, though mentioned, receives scant discussion.

However, there have been in the present generation here and there, a few English writings that recognize left ventricular failure without right ventricular failure and I shall quote briefly from three. Hirschfelder,<sup>9</sup> in 1918, wrote

Shortness of breath is usually the earliest and most common sign of cardiac failure and especially of failure of the left ventricle.

Cough, dyspnea, cardiac asthma, pulmonary hemorrhage constitute a group of symptoms characteristic of stasis in the pulmonary veins (broken pulmonary compensation) just as cyanosis, enlargement of the liver, and ascending edema are characteristic of failure of the right heart. In Wilkinson King's "safety-valve action of the right ventricle," failure of the latter substitutes a state of broken systemic compensation for one of broken pulmonary compensation.

G. Canby Robinson,<sup>10</sup> who stimulated his school at Nashville to pursue the study of heart failure wrote in 1927 as follows:

In our study of patients we are able to distinguish cases in which the left side of the heart is inefficient relative to the right side of the heart, from those in which the right side of the heart is relatively inefficient. While this distinction cannot be made with certainty in all cases some cases show a disturbance in the pulmonary circulation out of all proportion to the disturbances in the systemic circulation. These cases are suffering we believe from relative failure of the left ventricle which is unable to handle properly the blood sent to it by the right ventricle. Other cases show edema of the extremities and congestion of the abdominal viscera while the pulmonary circulation shows no evidence of being disturbed. In such cases the right ventricle is relatively inefficient, and is unable to receive and propel all the blood sent to it by the left ventricle. In many cases the disturbance of coordination between the ventricles affects both the greater and lesser circulations so that both show evidence of heart failure.

Soma Weiss<sup>11</sup> in 1931, wrote that 'in early stages of circulatory failure changes occur in the pulmonary circulation' that changes in the pulmonary circulation may be independent of the larger circulation that one does find early [in heart failure] a reduction of the vital capacity of the lungs" and that "dyspnea in the early stage of circulatory failure is produced through nervous communications between the pulmonary system and the medulla and not by local chemical changes within the respiratory center." Weiss and his associates have continued an active interest in heart failure and have published other more recent papers on the subjects of cardiac asthma<sup>12</sup> the state of the peripheral and pulmonary circulation in various types of heart failure<sup>13</sup> and the effect of digitalis<sup>14</sup>. Their work will be eventually assembled in detail and will include roentgenologic observations by Dr. Robb<sup>15</sup>.

On turning to the French and German literature one finds clear recognition of the syndrome of left ventricular failure in the writings of the present day and back over a period of fifty years or more. In 1889 for example Fraentzel<sup>16</sup> attributed pulmonary edema to

<sup>9</sup> Hirschfelder, A. D. Diseases of the Heart and Aorta, ed. 1, Philadelphia, J. B. Lippincott Company, 1918, p. 216.

<sup>10</sup> Robinson, G. C. The Disturbances of Cardiac Function Leading to Heart Failure. South. M. J. 20: 222 (March), 1927.

<sup>11</sup> Weiss, Soma. Circulatory Adjustments in Heart Disease. Ann. Int. Med. 5: 100 (Aug.), 1931.

<sup>12</sup> Weiss, Soma, and Robb, G. P. The Mechanism and Treatment of the Paroxysmal Dyspnea and Asthma Associated with Heart Disease. New England J. Med. 205: 1172 (Dec. 10), 1931.

<sup>13</sup> Weiss, Soma, and Robb, G. P. The Treatment of Cardiac Asthma (Paroxysmal Cardiac Dyspnea). M. Clin. North America 16: 961 (Jan.), 1931.

<sup>14</sup> Robb, C. P. and Weiss, Soma. Effect of Digitalis and Rest on Pulmonary and Peripheral Circulation in Patients with Circulatory Failure Caused by Heart Disease. Proc. Soc. Exper. Biol. & Med. 29: 1231 (June), 1932.

<sup>15</sup> Weiss, Soma. Personal communication to the author.

<sup>16</sup> Fraentzel, Oscar. Vorlesungen über die Krankheiten des Herzens. I. Die idiopathischen Herzvergrösserungen. Berlin, August Hirschwald, 1889, p. 53.

acute distention of the left ventricle, in his lectures he wrote "We observe frequently cases of edema of the lungs if the right ventricle still works with its normal strength while the left flags in its work" Fraentzel was also one of the first to emphasize the clinical significance of the important type of gallop rhythm as a sign of serious cardiac weakness, although Potain,<sup>17</sup> Traube<sup>18</sup> and Barie<sup>19</sup> had all referred to it earlier and recognized its importance. A present-day French authority, Lian,<sup>20</sup> has emphasized the clinical significance of the syndrome of left ventricular insufficiency, distinguishing between paroxysmal and continuous and between mild and severe types. He wrote in 1910 that "breathlessness on effort, palpitation left ventricular dilatation gallop rhythm passive pulmonary congestion reveal above all a left ventricular insufficiency which is but little pronounced and has developed

hearts in which some factor of strain is evident (and in most hearts such factors are obvious both in their presence and in their influence) the left ventricle is under a burden much more often than is the right. The total of essential hypertension, coronary thrombosis, and aortic valve lesions is far greater in the community than is that of mitral stenosis pulmonary valve stenosis and pulmonary disease sufficiently extensive to act as a strain on the heart.

Among the last 100 patients of mine who showed heart failure by evidence either in the pulmonary or in the systemic circulation or in both and in whom etiologic factors were clear, 74 per cent showed primary left ventricular strain, 14 per cent showed primary right ventricular strain and 12 per cent showed strain on both ventricles (table 1). Over the period of time during which these 100 cases consecutively occurred

TABLE 1—Heart Strain and Failure

Total 400 Cases per Cent		Author's Cases							Massachusetts General Hospital Cases of Congestive Failure		
		Among the 100 Cases of Congestive Heart Failure									
		Failure	Strain Without Failure	Total	Cardiac Asthma	Proto- diastolic Gallop Rhythm	Pulsus Alter- nans				
64.8	Left ventricle 68.8%*	Hypertension	34	99	133	7	10	4	20		
		Coronary thrombosis	17	43	60	8	6	2	17		
		Both	12	11	23	8	10	2	18		
		Aortic stenosis without mitral disease with or without hypertension	7	14	21	3	1	0	0		
		Aortic regurgitation without mitral disease with or without hypertension	4	13	17	2	8	0	4		
		Both	0	2	2	1	0	0	2		
		Congenital coarctation of the aorta	0	1	1	0	0	0	0		
		Total	74	153	227	24	30	8	61		
		15.0	Right ventricle 16%*	Mitral stenosis	11	39	50	3	0	0	16
				Pulmonary disease	3	5	8	0	0	0	3
Congenital (pulmonary stenosis)	0			2	2	0	0	0	0		
Total	14			46	60	3	0	0	19		
14.7	Both ventricles 15.7%*	Aortic and mitral disease	8	26	34	0	0	0	15		
		Mitral regurgitation	2	11	13	0	0	0	0		
		Hypertension and mitral stenosis							1		
		Mitral stenosis and coronary occlusion							1		
		Congenital (patent ductus arteriosus etc.)	0	6	6	0	0	0	0		
		Thyroidosis	0	3	3	0	0	0	3		
		Anemia	1	1	2	0	1	0	0		
		Acute rheumatic	1	0	1	0	1	0	0		
		Total	12	47	59	0	2	0	26		
		6.0	Total cases Cause unknown		100	276	376	24	32	8	100
	16			8	24						
100	Grand total			400							

The percentages refer to the 376 cases with definite factors of strain

slowly. In these cases generally the failure of the left heart induces that of the right heart." Cardiac asthma he recognized as evidence of acute left ventricular insufficiency.

This brief historical survey will suffice to show the vicissitudes of the conception of left ventricular failure and to point to its common neglect in medical practice and writings of the English speaking world of the present day.

#### THE FREQUENCY OF LEFT VENTRICULAR FAILURE

A brief analysis of cases of congestive heart failure reveals at once the preponderant frequency of failure of the left ventricle with or without failure of the right ventricle which so often follows. The majority of

there were 16 other cases that presented congestive failure without clearly recognizable factors. Also there were in the same time interval 284 cases of organic heart disease without evidence of congestive failure, among 276 of these in which etiologic factors were clear strain was preponderantly on the left ventricle in 183, or 66.3 per cent, preponderantly on the right ventricle in 46, or 16.7 per cent and on both ventricles in 47, or 17.0 per cent (table 1).

Thus, among 400 consecutive cases of organic heart disease the left ventricle was under the greatest strain in 64.3 per cent, the right ventricle in 15 per cent, both ventricles in 14.7 per cent, and in 6 per cent the type or primary location of the strain was not clear.

These cases, which I have studied personally in the past two years illustrate the point already emphasized that congestive failure of the left ventricle is more common and important than that of the right and should be looked for zealously since by early recognition and proper treatment not only may the left heart failure

17 Potain. Du rythme cardiaque appelé bruit de galop. Union med 1875 quoted by Fraentzel<sup>18</sup> p. 59.

18 Traube. Gesammelte Beiträge zur Pathologie und Physiologie. Berlin. A. Frankel 3. 1878 quoted by Fraentzel<sup>19</sup> p. 57.

19 Barie. E. Sur la pathologie du bruit de galop. Progrès méd. S. 595. 1880.

20 Lian. C. Le syndrome d'insuffisance ventriculaire gauche. Presse med 18. 49. 1910.

be relieved but the right heart failure which is likely to follow, may be prevented or postponed

As a control study of these cases of my own seen in private practice I have analyzed the last 100 cases of congestive heart failure with clear factors of strain seen in the general medical wards of the Massachusetts General Hospital expecting a somewhat higher incidence of rheumatic heart disease with mitral stenosis than in my private practice. This survey (table 1) gave the following results: primary left ventricular strain sixty-one cases, or 61 per cent (systemic hypertension twenty, coronary disease or thrombosis, seventeen, both systemic hypertension and coronary disease, eighteen, aortic stenosis or regurgitation or both without mitral valve disease and with or without hypertension six), primary right ventricular strain, nineteen cases, or 19 per cent (mitral stenosis sixteen, extensive pulmonary disease three), and strain on both ventricles twenty cases or 20 per cent (aortic and mitral valve disease fifteen, thyrotoxicosis three, mitral stenosis aortic regurgitation and coronary occlusion, one, mitral stenosis and systemic hypertension one).

In passing, it may further be pointed out that only about one in four of the cases of organic heart disease that I have seen in consultation has shown evidence of heart failure or insufficiency. This is especially significant, since my patients are at least as severely affected as those seen in general practice in the community at large. The point I would raise here is that the central interest of the practitioner of medicine should not, as some have asserted, be in the cases of failure, which of course he should recognize and treat properly, but rather in the cases without failure that have more promise for the future and that need recognition much more than do the more advanced cases, advice and treatment for these should help to prevent or at least to postpone the onset of heart failure.

#### SYMPTOMS AND SIGNS OF LEFT VENTRICULAR FAILURE (WITH OR WITHOUT RIGHT VENTRICULAR FAILURE)

I shall now take up briefly the symptoms and signs by which one may recognize left ventricular failure (with or without right ventricular failure). All of them are not necessarily present in the same case any more than is all the classic evidence present at one time in a case of subacute bacterial endocarditis but their assemblage under one heading which has not been completely carried out before so far as I know, will, I am sure, be helpful.

1 *Dyspnea of Cardiac Origin Without Mitral Valve Disease or Congenital Defects*—This kind of shortness of breath has always rightly been emphasized as evidence of cardiac weakness and often recognized as occurring before any evident increase of pressure in the systemic veins. Whatever its nervous mechanism may be and no matter how it is excited, its fundamental cause is almost certainly an increase in pressure in the pulmonary circulation with engorgement of the blood vessels. Resulting from this engorgement of the vessels there are two immediate effects—an encroachment on the air spaces of the alveoli and a stiffening of the alveoli to cause a state of functional emphysema. That this is so can be deduced from the other signs that I shall discuss shortly, namely decrease of vital capacity, visible engorgement of the blood vessels of the lungs on roentgen examination, and accentuation of the second heart sound in the pulmonary valve area. The

failure of many authorities to visualize engorgement of the pulmonary vessels resulting from failure of the left ventricle is of course due to the fact that they have been hidden from view for so long and that engorgement of the systemic veins, so readily seen, follows often very quickly after left ventricular failure and attracts undue attention. In my own cases in which it was possible to estimate the time interval between left ventricular failure and right, as best known in instances of paroxysmal dyspnea, the results varied greatly from a few hours to months or even years. As an illustration of a long time interval, I would cite the instance of a physician who has been under my observation for the past five years with pulsus alternans and protodiastolic gallop rhythm almost constantly and dyspnea on effort or paroxysmally at night (much benefited by digitalis), who went for nearly five years before he showed any increased venous pressure behind the right ventricle, when it did appear, it was in the liver largely and was dispelled by rest and digitalis.

2 *Cardiac Asthma or Acute Pulmonary Edema*—This is an extremely important clinical condition, evidence as a rule of acute failure of the left ventricle but open to an amazing amount of controversy in the past. Some there are who evidently have never seen a case of cardiac asthma and who therefore doubt its existence, but those of us who have seen a number of patients with this most distressing condition, usually in the middle of the night, can doubt neither its existence nor its significance. One of the important points about it is that it may come sometimes without previous warning that is with little or no dyspnea previously. About half of the patients with cardiac asthma whom I have seen recently have had such an experience. Almost invariably there is serious heart disease involving the left ventricle in patients with cardiac asthma—hypertensive enlargement, infarction from coronary thrombosis, or aortic valve disease with stenosis, regurgitation or both. There are a few exceptions. Of the twenty-seven patients with cardiac asthma or acute pulmonary edema whom I have encountered in private practice in the past two years, twenty-four had heart disease involving the left ventricle, as previously noted and three had mitral stenosis, this last small group is an interesting significant and much neglected one—it is most probable that in them the cardiac asthma is precipitated by pulmonary vascular congestion not the result of acute failure of the left ventricle but rather the result of the tachycardia and overactivity of the right ventricle (generally from overexertion) in the face of marked mitral stenosis. Dr. Sylvester McGinn and I are about to report a group of cases of this nature.

Among my series of 100 recent cases of congestive heart failure, cardiac asthma or acute pulmonary edema occurred twenty-four times, in thirteen cases without any evidence of engorgement of the systemic veins and in eleven cases with such systemic venous engorgement occurring later on or coincidentally. I would add that in my experience, although acute pulmonary edema may occur without asthmatic breathing, such an occurrence is rare, somewhat comparable perhaps to the infrequency with which one encounters cases of acute coronary thrombosis without pain.

3 *Vital Capacity of the Lungs*—A few individuals have followed the important lead of Peabody<sup>21</sup> and his

<sup>21</sup> Peabody, F. W. and Wentworth, J. A. Clinical Studies of the Respiration. IV. The Vital Capacity of the Lungs and Its Relation to Dyspnea, Arch. Int. Med. 20: 443 (Oct.) 1917.

associates and of Pratt<sup>22</sup> in emphasizing the value of spirometric measurements in estimating the degree of pulmonary congestion in cardiac failure. Most of us have tended to scorn such a test on the score that it is not sensitive enough and that it is too subject to influence by all sorts of factors besides heart failure. However, from recent experience, as evidenced in an example to be recounted later, I would advise the resumption of this test in selected cases, particularly in those cases of left ventricular strain in which a control base line has been established either before failure has occurred or after it has been dispelled. Used with judgment the vital capacity may be as satisfactory a gage of pulmonary vascular engorgement as is measurement of the systemic venous pressure instrumentally or by inspection of the neck veins. West's<sup>23</sup> standards of 2.5 liters of vital capacity per square meter of body surface for men and 2 liters for women are suitable as average normal figures for comparison.

**4 Roentgen Evidence of Pulmonary Vascular Congestion**—With the advent of roentgen study, it became possible to see the pulmonary artery and great veins and their branches, and in 1920 Assmann<sup>24</sup> suggested measurements of the shadows of the lung hilus to determine increases under abnormal conditions. Assmann found that the normal width of the shadow of the lung hilus was from 12 to 13 mm (more easily measured on the right side). Of twenty patients studied by him with a hilus shadow width of over 15 mm, nineteen had organic heart disease, some with failure of the left ventricle. Dietlen<sup>25</sup> and a few others followed Assmann's example but except to make general statements about the hilus shadows and lung markings in heart disease, little has been done in careful study of this relationship. Holmes,<sup>26</sup> in 1923, reported the increase of lung markings in heart disease as a condition that should be differentiated from pulmonary disease. Recent experience, as in the case to be reported, has caused me to believe that here one may have a useful, perhaps even a quantitative, method for the determination of the degree of pulmonary congestion in left ventricular failure. Of course, in mitral stenosis and congenital heart disease and in pulmonary disease the hilus shadows may be large, too, but of these conditions I am not now speaking. With Dr Holmes and Dr McGinn I am making further studies. In the case cited later, the area of the hilus shadows decreased one half in two weeks with improvement under digitalis therapy.<sup>27</sup>

**5 Pulsus Alternans**—I come finally to three additional signs of weakness or failure of the left ventricle, the first one, alternation of the pulse, is practically the only pathognomonic sign known of such weakness. It is a common sign, if one includes, as one should, pulsus alternans following premature contractions for a few beats. Only the most marked grades can be picked up by palpation of the arterial pulse, and of course such a condition must not be confused with bigeminal heart rhythm. Moderate grades of alternation can be

picked up by sphygmomanometry but the slightest grades satisfactorily only by sphygmography. All grades are important, but it is open to question whether one should go to the trouble of hunting for the slightest grades by mechanical pulse tracings. If this is done, slight grades can often be found, as I found some years ago.<sup>1b</sup> Probably it suffices to study carefully the pulse coming under the blood pressure cuff at the systolic pressure level. The finding of pulsus alternans is most common with heart weakness in heart disease due to hypertension, coronary disease, or aortic valve disease. I noted the presence of definite pulsus alternans of 2 or 3 up to 10 or 15 mm of mercury in 8 of the 100 cases with heart failure that are tabulated. Among these eight patients four had hypertensive heart disease, two coronary thrombosis, and two the combination of hypertension and coronary thrombosis. All but one patient had also protodiastolic gallop rhythm. Four of the eight have died within this interval of two years. Most certainly, had I searched more diligently I would have found more cases among the other ninety-two.

**6 Protodiastolic Gallop Rhythm**—A loud third sound occurring shortly after the second and heard best at the cardiac apex, in the absence of mitral stenosis and of auriculoventricular block, is one of the most valuable and neglected signs known of weakness and probably of dilatation of the left ventricle. Most English textbooks are astonishingly silent about this sign, which I find to be extremely helpful in confirming a diagnosis of left ventricular weakness. It is often attended by a palpable impulse. When the heart rate is fast, the sound and impulse fall in the middle of diastole or even at the end of it, but when the rate is slower its protodiastolic timing is more evident. It may even occur when the auricles are fibrillating. This sign was present in 32 of the 100 cases of my series outlined, being confined almost entirely (30 cases) to those patients with preponderant left ventricular strain, in the remaining 2 cases it was found with severe anemia and with failure in acute rheumatism in childhood. Among the 30 patients with preponderant left ventricular strain, 10 had a history of chronic hypertension, 6 of coronary thrombosis, 10 of both hypertension and coronary thrombosis while 4 had aortic valve disease, 3 with regurgitation and 1 with stenosis. Ten of the patients had had cardiac asthma. Of the 32 patients, 13 died within two years of the finding of the gallop rhythm.

**7 Increase in Intensity of the Pulmonary Second Sound**—This is often a helpful confirmatory sign of increased pressure in the pulmonary circulation, especially in cases of essential hypertension in which with the onset of failure of the left ventricle the accentuation of the aortic second sound gives way to that of the pulmonary second sound with restoration of the original condition when the failure is cleared.

Murmurs are of little or no importance in cases of failure of the left ventricle. They may or may not be present. The commonest murmur when one is found is a systolic blow at the apex, probably denoting relative mitral insufficiency. Weakness of the apical first sound is occasionally but not constantly found. Auricular fibrillation may be found with failure of the left ventricle, but it has been my experience that this is usually not the case, it is common knowledge that it is much more frequent in cases of mitral stenosis. In my own series of 100 cases of congestive failure presented in table 1, it occurred twenty-one times, in ten of the

22 Pratt, J. H. Long Continued Observations on the Vital Capacity in Health and Heart Disease, *Am J M Sc.* 164: 819 (Dec.) 1922.

23 West H. F. Clinical Studies on the Respiration VI. A Comparison of Various Standards for the Normal Vital Capacity of the Lungs *Arch Int Med* 25: 306 (March) 1920.

24 Assmann H. Ueber Veränderungen der Hilusschatten bei Herzkrankheiten München med Wchschr 67: 177 (Feb 13) 1920.

25 Dietlen H. Herz und Gefässe in Röntgenbild Leipzig Johann A. Barth 1923.

26 Holmes G. W. and Dann D. S. Cardiac Pneumofibrosis *Am J Roentgenol* 10: 343 (May) 1923.

27 Definite roentgen evidence of actual edema of the lungs themselves may be found in cases of high grade congestive failure, it is not an early sign. When there is emphysematous or asthmatic breathing due to congestive failure the diaphragmatic excursions may be much limited with the diaphragm at a low level as in bronchial asthma.

eleven cases of mitral stenosis in three cases of hypertension, in five cases of coronary disease, and in three cases of hypertension and coronary disease combined. Tachycardia of normal (sino-auricular) origin is quite common in congestive failure of the left ventricle, tending to disappear when there is relief by digitalis therapy or rest. Paroxysmal tachycardia may precipitate failure of a heart with little reserve.

#### IMPORTANCE OF THE RECOGNITION OF LEFT VENTRICULAR FAILURE WITHOUT RIGHT VENTRICULAR FAILURE

Why is it so important to recognize left ventricular failure? Because it is so amenable to treatment. Contrary to the idea expressed by so many of the English school in our own generation digitalis is usually a great aid in the treatment of the left-sided heart failure even though the cardiac rhythm in such cases generally is regular. If auricular fibrillation happens to be present, so much the better, but the idea that it must be present to permit benefit from digitalis is certainly wrong. This has been pointed out clearly by Christian.<sup>28</sup> Experience with many cases in the past ten years has convinced me of the truth of his teaching. The case here reported is a clear example. Of course, rest as well as digitalis

one pill three times a day after meals for the first week (21 Gm.) followed by one pill (0.1 Gm.) daily thereafter without making any other change in his activities. Two weeks later, March 15, he returned to the clinic feeling perfectly well with out dyspnea and stronger and more fit than he had been for a long time. The changes in the significant observations are given in table 2. The electrocardiogram showed no change except that the heart rate had dropped from 100 to 80 and there was evidence of the effect of digitalis on the T waves.

#### SUMMARY AND CONCLUSIONS

Weakness and congestive failure of the left ventricle are common whether or not there is an associated right ventricular failure. It is important to recognize this fact and to be able to diagnose the condition, since treatment by the administration of digitalis by rest, or by both these measures is usually of great help even though the heart rhythm is normal and even though there is no evidence of congestion of the systemic veins.

The left ventricle is the primary site of strain four to five times more often than is the right ventricle, essential hypertension, myocardial infarction from coronary thrombosis (which rarely involves the right ventricle), and aortic valve disease exceeding in total frequency mitral stenosis, pulmonary valve stenosis.

TABLE 2—Observations in Case of J. M.

Date	Digitalized	Paroxysmal Dyspnea	Proto- diastolic Gallop Rhythm	Pulsus Alter- nans	A <sub>2</sub> and P <sub>2</sub>	Vital Capacity Cc	Orthodiagram		Pulse Rate	Blood Pressure	
							Area Lung Hilus Shadows Sq. Cm.	Area Heart Shadow, Sq. Cm.		Systolic	Diastolic
March 1	0	+	+	0	P + > A <sub>2</sub>	3,000	26.5	152	96	170	125
March 15	+	0	0	0	A + > P <sub>2</sub>	3,500	13.0	150	78	175	110

and sometimes, if necessary, diuretics may afford much relief but digitalis alone may turn the scale as in the present case, which can be easily and often duplicated.

#### REPORT OF CASE

A man, aged 57, a clerk, reported to the Cardiac Clinic of the Massachusetts General Hospital, March 1, 1933, complaining of a slight sense of smothering at night, which had forced him to use two pillows during the previous month. There had been a slight cough. Examination showed no abnormalities except for considerable cardiac enlargement (the apex impulse and the left border of dullness in the sixth left intercostal space, 11 cm. from the midsternum and 3 cm. beyond the midclavicular line) accentuated pulmonary second sound, which was louder than the aortic second sound, a protodiastolic gallop rhythm at the cardiac apex, a loud blowing apical systolic murmur, and hypertension (systolic blood pressure 170 to 175 mm. of mercury in both arms and diastolic pressure 125). There was no engorgement of the cervical veins, the liver was not enlarged and there was no edema of the legs or feet. An electrocardiogram showed normal rhythm at a rate of 100, abnormal left axis deviation (angle of -41 degrees), slight widening of the QRS waves and inverted QRS. Vital capacity was 3,000 cc. (the best of three tries). An orthodiagram showed marked general cardiac enlargement, the measurements were as follows: from the midline to the most distant right border, 53 cm.; to the most distant left border, 113 cm.; transverse diameter, 16.66 cm.; long diameter, 15.6 cm.; internal diameter of thorax, 25.4 cm.; cardiothoracic ratio, 61 per cent; great vessels 4.8 cm.; cardiac area, 152 square centimeters. The hilus shadow area was right, 19.6 square centimeters, left, 6.9 square centimeters.

The patient was given digitalis in the form of pills, each of 0.1 Gm. (1½ grains), of the dried leaf, and was told to take

and pulmonary disease sufficient in degree to be a strain. Cases of heart failure without obvious factors of strain like those mentioned are not common. The most frequent cause of strain on, and enlargement and failure of, the right ventricle is left ventricular failure.

There are several important symptoms and signs that point to weakness and failure of the left ventricle and which should permit its recognition in the absence of mitral stenosis and congenital heart disease, they are (1) cardiac dyspnea, (2) cardiac asthma or acute pulmonary edema, (3) diminishing vital capacity due to heart disease, (4) engorgement of the roentgen shadows of the lung hilus blood vessels, (5) protodiastolic gallop rhythm at the cardiac apex in the absence of heart block, (6) pulsus alternans, and (7) increasing accentuation of the pulmonary second heart sound. The failure in the past easily to visualize congested blood vessels in the lungs undoubtedly accounts for the unwarranted preponderant emphasis placed on increase of systemic venous pressure in congestive heart failure.

Massachusetts General Hospital.

**Character, Knowledge and Skill.**—The family physician, then, as he has adjusted himself to the demands of society, though temporarily overshadowed by the specialist, in all probability more nearly meets the needs of our civilization in caring for the great majority of illnesses than would any figmentary figure which one might devise. His effectiveness in his field of activity depends upon character, knowledge and skill, rather than upon material resources or organization. The problem is to attract such men into the profession of medicine and then properly educate them—matters which are neither new nor unappreciated.—Harvey, S. C. *Oikonomia Medika, Yale J. Biol. & Med.* 5:323 (March) 1933.

28. Christian, H. A. Digitalis Therapy: Satisfactory Effects in Cardiac Cases with Regular Pulse Rate, *Am. J. M. Sc.* 157:593 (May) 1919.

FOOD POISONING DUE TO  
STAPHYLOCOCCI

REPORT OF AN OUTBREAK

RALPH McBURNEY, MD  
UNIVERSITY, ALA

The exhaustive study of the subject of food poisoning in Great Britain by Savage and White<sup>1</sup> covered a period of several years. One hundred outbreaks were involved, incriminating such foodstuffs as cooked meats, fish fowl, cheese, milk, cake and canned goods of various sorts. The organisms chiefly concerned were *Bacillus aeterycke*, to which they attribute three fourths of these cases. Next found in order of frequency was *Bacillus enteritidis* of Gürtner. From all evidence accumulated, as the result of a number of years' study, they have not found a single instance in which *Bacillus paratyphosus* B was the cause. Further, they feel that cases reported as due to *B. paratyphosus* B were in reality due to *B. aeterycke*, since all strains of paratyphoid bacilli studied came from paratyphoid fever and none possessed the irritant qualities necessary to produce the typical facies of acute food poisoning.

As far as I have been able to ascertain in going over the literature, no cases of acute gastro-enteritis due to staphylococci have been reported by these or other workers as occurring in Great Britain. There were eight outbreaks from poisonous cheese in their studies. One of these, they found, was due to organisms of the *Salmonella* group (*B. supester*). In the other seven they failed to find any of the organisms of this group nor did they find evidence of the substance tyrotoxin, detected in poisonous cheese by Vaughan,<sup>2</sup> but later refuted by him as the cause of poisoning from such sources.

Staphylococci as a cause of acute food poisoning outbreaks were not recorded in the literature until 1914, when Barber<sup>3</sup> reported the occurrence of cases of acute gastro-enteritis on a farm in the Philippines from milk of a certain cow. Cases did not occur from ingestion of fresh refrigerated milk but from milk kept at room temperature. He isolated a yellow and a white staphylococcus from the milk. The white staphylococcus inoculated into preserved milk produced symptoms in the investigator while the yellow one did not.

In 1930, Dack and his co-workers<sup>4</sup> reported finding a yellow staphylococcus in samples from a Christmas cake, which had caused acute gastro-enteritis in ten persons in Chicago in 1929. Bacteria-free filtrates produced by growing the organisms from two to three days at 37°C produced violent gastro-intestinal symptoms when fed to human volunteers in quantities of from 2 to 10 cc.

The same year Jordan<sup>5</sup> reported an outbreak of acute food poisoning occurring in Puerto Rico and affecting four persons. From a sample of cheese sent to him he isolated yellow staphylococci. Broth filtrates prepared in the way mentioned produced typical gastro-

intestinal symptoms when fed to three human volunteers. In 1931, Jordan and Hall<sup>6</sup> reported another instance in which two persons in the Panama Canal Zone were made ill and in which case staphylococci were isolated from chicken gravy. Broth filtrates likewise produced typical symptoms in several human volunteers.

In 1931, Jordan<sup>7</sup> reported an outbreak due to yellow hemolytic staphylococci isolated by Dr G M Dack at the laboratories of the University of Chicago from specimens of devil's food layer cake purchased at a store in Milwaukee, which caused acute illness in four persons. Broth filtrates produced gastro-enteritis in two of three human volunteers when given as little as 2 cc in pasteurized milk. Two others, given 5 cc in the same manner, were likewise affected. Two human volunteers who ate some of an experimental cake inoculated with some of the organisms were also made ill.

Ramsey and Tracey,<sup>8</sup> in 1931, reported, from a study of malt flavor in milk the isolation of an orange colored staphylococcus thought to be the cause of "off flavor." Tasting milk inoculated with the organism produced violent symptoms of acute gastro-enteritis in one of the authors (Ramsey). In 1932, Tanner and Ramsey<sup>9</sup> working with the same organism, state that several of a group of twenty individuals who visited the laboratory for the purpose of testing "off taste" of milk inoculated with the organism reported that they were made ill, and that one member of the staff was made ill from drinking pure cultures of the organism. Jordan,<sup>7</sup> who reviews the literature in connection with food poisoning outbreaks, cites eight in which staphylococci, while not absolutely incriminated by the experimental feeding of human volunteers, certainly appear from all the evidence presented, to have been the cause.

In addition to this accumulated evidence, incriminating staphylococci as the cause of at least six food poisoning outbreaks, a seventh recently studied is herein reported.

Following a dinner served to women students at a southern educational institution, at which chocolate eclairs were served as dessert, there was a severe outbreak of acute gastro-enteritis. There were 150 marked cases. Of these, 75 were very severe, the remainder, less so. In addition, there were a number of others who complained of slight nausea and weakness and a few cases reported later but not seen by attending physicians. There were approximately 325 persons who ate eclairs. Those who did not were not affected. There were a few visitors made ill, who ate dinner elsewhere and partook only of eclairs. Quite a number of the girls took the eclairs to their room, eating them around 6 p m and becoming ill about 9 o'clock. These constituted the most severe cases. Not a single person who did not eat eclairs was made ill.

In checking up, as far as it was possible to do so, it is safe to estimate that at least 60 or 70 per cent of those who ate eclairs were affected to a degree. In the majority of cases, attacks were initiated within two or three hours following the meal, which was served at 1 p m.

The eclairs were made by a local bakery. The pastry shells were made the day before and kept in the original baking pans. The custard filler was made that morning.

From the Department of Bacteriology University of Alabama School of Medicine.

<sup>1</sup> Savage, W G and White P B. Special Report Series 92. Medical Research Council Reports London, 1925.

<sup>2</sup> Vaughan V C. Cheese Poisoning in Michigan in Epidemiology and Public Health 2 p 166.

<sup>3</sup> Barber M A. Milk Poisoning Due to a Type of Staphylococcus Albus Occurring in the Udder of a Healthy Cow, Philippine J Sc. 9 515 1914.

<sup>4</sup> Dack, G M Cary W E Woolpert Oram and Wiggers Hazel. Outbreak of Food Poisoning Proved to be Due to Yellow Hemolytic Staphylococcus J Prev Med 4 167 175 (March) 1930.

<sup>5</sup> Jordan E O. The Production by Staphylococci of a Substance Producing Food Poisoning J A M A. 94 1648 (May 24) 1930.

<sup>6</sup> Jordan E O and Hall J R. J Prev Med 5 387 (Sept) 1931.  
<sup>7</sup> Jordan E O. Staphylococcus Food Poisoning J A M A. 97 1704 (Dec. 5) 1931.

<sup>8</sup> Ramsey R J and Tracey P H. Food Poisoning Probably Caused by Orange Colored Staphylococcus from Udder of Apparently Healthy Cows Proc. Soc. Exper Biol & Med 28 390 (Jan) 1931.

<sup>9</sup> Tanner F W and Ramsey R J. Food Poisoning Due to a Yellow Micrococcus from Milk, Am J M Sc. 184 80-85 (July) 1932.

and the shells were filled by means of a pressure gun, shells being held in the hand of the worker while being filled. Delivery was made about 11 a. m. The eclairs were kept at room temperature and served about 1:30 p. m.

There were several batches of eclairs. All were made of similar batches of ingredients but were not all filled with custard at the same time.

This fact, individual resistance or the ingestion by some of relatively small portions of the pastry or the fact that some of the eclairs contained few or no organisms may account for the fact that more of those who ate eclairs were not made ill.

Symptoms were marked by nausea, salivation, abdominal pain, vomiting, extreme prostration, profuse diarrheal attacks, and chilliness. Some vomited at intervals of from ten to fifteen minutes and as many as twenty to thirty times. A few vomited throughout the night. Vomiting attacks became further spaced in some and in other patients ceased suddenly as they became better. Diarrheal attacks averaged from six to eight. Of the seventy-five pronounced cases five patients, were near collapse. Three had a weak, rapid pulse

*Action of the Filtrates on the Seven Volunteers*

	Minimum	Average	Maximum
Time before symptoms appeared	1 h 45 m	2 h 15 m	3 h
Time before vomiting began	2 h	3 h	3 h 20 m
Number of vomiting spells	3	9	14
Interval between spells	10 m	15 m	20 m
Vomiting persisted	1 h 5 m	2 h 30 m	4 h
Time before diarrhea began	2 h 30 m	3 h	4 h
Time following onset of vomiting	15 m	Coincident with	40 m
Number of diarrheal attacks	2	5	13
Diarrhea persisted	2 h	3 h 50 m	7 h
Time elapsed before felt relief	3 h	5 h 30 m	10 h
Time elapsed before complete recovery	5 h	17 h	48 h
Complaints following recovery: general weakness, soreness of abdominal muscles and slight headache			

Blood pressures were not taken, since the attention of two attending physicians was focused on relieving the acute symptoms.

The short incubation period (from two to three hours), the symptoms and the facts regarding the eating of the eclairs led to the supposition that a staphylococcus was involved. As a matter of routine, dilution plates with Endo's medium were made of some of the custard filler and from the pastry. Numerous golden yellow staphylococcus colonies resulted, but nothing resembling the Salmonella group was observed. Agar dilution plates of the filler and crust likewise produced numerous golden yellow colonies, which proved to be staphylococci. Five different colonies were picked from different plates. Bacteria-free broth filtrates were prepared from forty-eight hour cultures of these organisms. Similar filtrates were prepared from two of four cultures sent me through the kindness of Dr. Leon C. Havens, director of laboratories, Alabama State Department of Health, to which some of the eclairs were sent by the local food and milk inspector. Ten cubic centimeter quantities of these filtrates were fed to each of eight volunteer medical students in 200 cc of pasteurized milk. As controls, four students were given similar amounts of sterile broth of the same batch used for growing the organisms. This was likewise given in 200 cc of pasteurized milk. The dosages were given numbers and mixed, so that no one knew whether he

was getting plain or toxic broth. Of those receiving the bacterial filtrate, all were ill except one, he was slightly nauseated and felt weak. None of the controls were affected. The minimum period of onset was one hour and forty-five minutes, and the maximum period three hours. Symptoms were nausea, salivation, vomiting, diarrhea, extreme prostration, chilliness, sweating, abdominal pain and tetanic muscular contraction, especially of the flexors of the legs. These contractions were followed by intense muscular pains. All symptoms were manifestly similar to those exhibited by the girls who were sick following the meal.

Some of these volunteers were extremely ill, vomiting blood and bile and passing bloody stools. Several described their feelings to me by saying that if death was necessary for relief they were ready to die. Several, in attempting to walk upstairs to their rooms collapsed. Complete recovery occurred among all the accidental victims and the volunteers.

#### COMMENT

As has been the case with other workers who have reported food poisoning outbreaks due to staphylococci, the source of contamination of the eclairs could not be traced. Thorough bacteriologic examination of all ingredients used in the preparation of the custard filler and in preparation of the cake substance failed to show any organisms of the aureus variety. Those organisms present were comparatively few in number. Cooking experiments conducted at the bakery following inoculation of custard filler with staphylococci isolated from the eclairs showed that the heating process employed in making the custard destroyed them, as many as 2,500,000 staphylococci per cubic centimeter of liquid custard being completely destroyed by the cooking process, which is done at 185 F (85 C) for ten minutes. These experiments will be described in a subsequent paper. The bakery was scrupulously clean. No history of recent illness of any of the employees, colds, furunculosis, sore throats or hand infections could be elicited. It is probable, however, that contamination of the custard or pastry might take place during the cooling of the custard or filling of the pastry shells. As previously stated, they were filled by hand, a pressure gun being used to express the custard into the pastry shell. These so-called guns are constructed so that they are not easily cleaned. Considerable film of dried custard was noted in the one used in this particular instance, but, unfortunately, was seen too late for a satisfactory bacteriologic examination. Similarly, custard filler prepared and allowed to stand uncovered for several hours might easily become contaminated with virulent staphylococci through coughing and sneezing of the bakery personnel in making and handling them. If filled eclairs are allowed to stand at room temperature for a considerable period, it is easy to understand how heavy contamination might take place. Possible contamination following delivery might likewise be considered. Experiments in connection with these factors are now in progress.

#### SUMMARY

There have been, as far as could be ascertained, six well defined outbreaks of food poisoning due to staphylococci, proved epidemiologically and by production of symptoms in human feeding experiments. The outbreak of food poisoning due to a golden yellow staphylococcus here reported is the seventh.

Of the seven outbreaks, two were traced to milk, two to cake, one to cheese, one to chicken gravy, and one to chocolate eclairs. All such outbreaks reported have occurred in the United States or its possessions. The history, short period of onset and acute symptoms studied in cases and human volunteers should clearly point to the etiologic factor involved in future outbreaks.

It is probable that a large number of outbreaks of food poisoning in this country and elsewhere, in which the etiologic factor has not been determined, have been due to organisms of the staphylococcus group.

The source of contamination of food with these organisms has not yet been definitely ascertained. Pointing, however, to man himself, it appears that pastries, custard fillers, and the like, should be well protected against possible contamination in preparation and storage and that cheap cotton, paper or cellophane<sup>10</sup> mittens might be used in bakeries in the handling of the finished products. Custard fillers should be refrigerated immediately following preparation until ready for use. After baking, cakes and pastries should be covered or placed in especially constructed cases and not left about in the open or on tables where they may be exposed to contamination from the coughing and sneezing of bakery personnel. These precautions could well apply to the storage and handling following delivery, especially in institutions where a large kitchen force is employed.

### METHYLENE BLUE A SYNERGIST, NOT AN ANTIDOTE, FOR CARBON MONOXIDE

HOWARD W. HAGGARD, M.D.

AND

LEON A. GREENBERG, Ph.D.

NEW HAVEN, CONN.

Methylene blue (methylthionine chloride U. S. P.) has recently been much in the lay press, not only as an antidote for cyanide, which it is, but also for carbon monoxide, which it is not.

P. J. Hanzlik<sup>1</sup> has reviewed the evidence that this substance is an antidote to cyanide. As he points out, the antagonistic property of methylene blue for cyanide was demonstrated experimentally as early as 1926 and has been confirmed by more recent work.

On the other hand, the alleged antagonism between methylene blue and carbon monoxide has no valid support. The theoretical basis of the claim for an antidotal action is derived from the brilliant investigations of Warburg,<sup>2</sup> but Warburg's observations on isolated tissues have no real bearing on carbon monoxide asphyxia in man. The experiments of Matilda M. Brooks<sup>3</sup> on animals are of little evidential value. The fact is that in its effect on man and other red-blooded animals, methylene blue acts, not as an antidote for carbon monoxide, but as a synergist. It not only fails to relieve carbon monoxide asphyxia, it may even induce fatalities that would not otherwise have resulted.

10. I have subjected cellophane to autoclaving at 15 pounds for twenty minutes without physical change.

From the Laboratory of Applied Physiology, Yale University.  
1. Hanzlik, P. J. *Methylene Blue as an Antidote for Cyanide Poisoning*. J. A. M. A. **100**: 357 (Feb. 4) 1933.

2. Warburg, Otto. *Ueber die chemische Konstitution des Atmungsferments*. Die Naturwissenschaften **20**: 26, 1928.

3. Brooks, Matilda M. *Effect of Methylene Blue on CN and CO Poisoning*. Proc. Soc. Exper. Biol. & Med. **29**: 1228 (June) 1932. *The Effect of Methylene Blue on HCN and CO Poisoning*. **102**: 145 (Oct.) 1932. *Am. J. Physiol.* **102**: 145 (Oct.) 1932. *Methylene Blue as an Antidote to CO Poisoning*. *ibid.* **104**: 139 (April) 1933.

### THE DISTINCTION BETWEEN CYANIDE POISONING AND CARBON MONOXIDE ASPHYXIA

The idea that methylene blue might be an antidote for carbon monoxide rests on an almost complete misapprehension of the physiology of carbon monoxide asphyxia. It is based on the assumption that carbon monoxide in the amounts generally fatal acts like cyanide by interfering with the oxidative ferment of the tissues. Warburg has indeed shown that even small amounts of cyanide may inhibit the action of this ferment and thus abolish the ability of the tissues to use oxygen.

Warburg has shown further that, when methylene blue is applied to isolated tissues, it tends to counteract the influence of cyanide on the tissue ferment. In this fact there is an apparent theoretical basis for the belief that methylene blue might counteract the effects of cyanide in the living body. In reality, as is now known, this is not the explanation of the antidotal action of methylene blue for cyanide in living red-blooded animals or human beings. It applies only to bloodless tissues.

Warburg has likewise shown that carbon monoxide may combine with the tissue ferment and inhibit its activity. But as Warburg himself recognizes, the concentrations of carbon monoxide which are immediately fatal to men and animals are far lower than those which have any appreciable influence on the respiratory ferment of the tissues. The ferment has an affinity for carbon monoxide which is several thousand times less than that of hemoglobin for this gas. In experiments designed to show the inhibitory action of this gas on the ferment in isolated tissues it is therefore necessary to employ concentrations of carbon monoxide about a thousand times greater than those which kill men and animals. Warburg, working with tissues free from hemoglobin, used atmospheres of 95 per cent of carbon monoxide and only 5 per cent of oxygen. The hemoglobin of the blood, on the contrary, even in the presence of 21 per cent of oxygen and only 0.1 per cent of carbon monoxide, combines with the carbon monoxide to a fatal degree. For these reasons very small amounts of carbon monoxide are required to kill a man, while enormous concentrations are required to affect the respiratory ferment to any appreciable degree.

In further support of this view it may be recalled that Haggard<sup>4</sup> has shown that the nerve cells of the chick, when cultivated in vitro, will live and grow normally in the presence of 80 per cent of carbon monoxide and 20 per cent oxygen, and likewise that the elder Haldane<sup>5</sup> has shown that insects, which have no hemoglobin but which do have tissue ferment, are not in the least affected by an atmosphere containing 80 per cent of carbon monoxide and 20 per cent of oxygen. The same insects are, however, readily poisoned by small amounts of cyanide. Asphyxia from carbon monoxide results, then, not from inability of the tissues to utilize oxygen but from deficiency of oxygen in the blood. Methylene blue does not increase the supply of oxygen.

Furthermore recent work by Wendel<sup>6</sup> indicates that the antidotal action of methylene blue for cyanide is

4. Haggard, H. W. *Growth of Neuroblast in the Presence of Carbon Monoxide*. *Am. J. Physiol.* **60**: 244 (April) 1922.

5. Haldane, J. S. *Respiration*. Yale University Press 1922, p. 160.

6. Wendel, W. B. *Methylene Blue and Cyanide Poisoning*. J. A. M. A. **100**: 1054 (April 1) 1933. *The Mechanism of the Action of Methylene Blue and Sodium Nitrite in Cyanide Poisoning*. *Proc. Am. Soc. Biol. Chem.* April 10-12 1933, page c.

to be found, not primarily in the action of this dye on the tissue ferment, but in an effect of the dye on the hemoglobin of the blood somewhat resembling that of carbon monoxide. Methylene blue converts hemoglobin into methemoglobin. Cyanide combines with methemoglobin. The formation of methemoglobin and the resulting withdrawal of cyanide from the blood and tissues in the formation of cyanmethemoglobin thus reduces the concentration of cyanide free to act as a poison on the tissue ferment. In this reaction of cyanide with the methemoglobin formed under the influence of methylene blue, rather than in any counteraction of the dye on the tissue ferment is to be found the antidotal effect of methylene blue in cyanide poisoning.

This reaction of the dye in the blood, although beneficial in cyanide poisoning, is extremely harmful in carbon monoxide poisoning. Carbon monoxide exerts its poisonous effect by combining with hemoglobin and rendering it temporarily incapable of carrying oxygen. Methemoglobin is also incapable of carrying oxygen. The conversion of a portion of the hemoglobin of the blood into methemoglobin, instead of benefiting the anoxemia, exaggerates it. Thus on theoretical grounds methylene blue is definitely contraindicated in carbon monoxide poisoning. The experimental work to be here reported shows that its use intensifies asphyxia, delays recovery, and promotes death.

The administration of methylene blue in cases of carbon monoxide poisoning, as reported recently in the lay press, has generally been made after the patients had already eliminated a large part of the carbon monoxide that they had absorbed. This statement is true also of the cases reported by Geiger.<sup>7</sup> We agree with him that they show no definite advantage from treatment with methylene blue. After removal of the victim from the atmosphere of carbon monoxide, the elimination of the gas from its combination with hemoglobin is especially rapid when inhalation of oxygen and carbon dioxide is administered, as in most of the cases reported. The concentration of carbon monoxide in the blood may fall 20 or 30 per cent or more even in a quarter of an hour. In such cases the administration of methylene blue may not be fatal, but neither is it beneficial.

#### THE INFLUENCE OF "COUNTERSHOCK"

In the experiments of Brooks in support of the claim for the antidotal action of methylene blue, rats were exposed to approximately 1 per cent of carbon monoxide until unconsciousness developed, when they were removed from the gassing chamber. Some of the animals were then injected with a solution of methylene blue, while others were allowed to recover untreated. The criterion used for recovery was the ability of the rat "to run straight forward." It was found that the rats treated with methylene blue met this requirement in about half the time required for the untreated rats.

It is noteworthy that in these observations of Brooks the control rats were not injected even with saline solution. This point is of considerable importance, for in animals as small as rats, even without any treatment, the blood is quickly cleared of carbon monoxide, and recovery, if the animal recovers at all, is extremely rapid. During the period of recovery any strong sen-

sory stimulus, particularly one involving pain such as puncture with a hypodermic needle, may induce both a psychic and a motor response. This well known fact is the basis of one of the many fallacious methods that have from time to time been suggested for the treatment of carbon monoxide poisoning, namely, "countershock." It has been observed on men that pain caused by slapping the face, pounding the soles of the feet or stretching the anal sphincter will sometimes hasten the return of consciousness. In one of the booklets telling employees of electric light companies how to resuscitate men from electrocution, this procedure of mechanical "countershock" was recommended. It was accompanied by a photograph showing an unconscious man with a hatchet placed suggestively beside him.

From our data it appears that the rats in the experiments of Brooks were subjected to "countershock." They walked quicker, if not straighter, because the pain of the injection woke them up. If a needle had been stuck into the control rats, as was done in our experiments, they would have waked up also.

#### EXPERIMENTS ON RATS

In our experiments the time required to produce death under inhalation of carbon monoxide was determined for rats injected with methylene blue and for rats injected with an equal quantity of saline solution. The carbon monoxide content of the blood at death was determined in each case. Six rats, all of the same weight, three with methylene blue, 20 mg per kilogram, and three with saline solution, were placed under one large bell jar. Sufficient carbon monoxide was run in to make a concentration of 0.5 per cent in the air of the jar. The rats receiving methylene blue were labeled respectively a, b and c, the rats with saline solution were d, e and f. Failure of respiration was taken as the death point, although in each case the heart continued to beat for a short time. Rats a, b and c died in 26, 30 and 33 minutes, respectively. Rats d, e and f died in 25, 29 and 35 minutes, respectively. The total times for each group were identical, 89 minutes, or an individual average of 29 minutes and 40 seconds. The methylene blue did not prolong the time required for the carbon monoxide to kill.

The rats were removed from the jar and on each a determination was made of the percentage saturation of the blood with carbon monoxide. The tannic-pyrogallol acid method of Sayers and Yant<sup>8</sup> was used, which can be read colorimetrically to about 5 per cent. The blood of each rat, alike those with methylene blue and those without, showed between 80 and 85 per cent saturation. The rats receiving methylene blue did not show a higher degree of saturation than did the control rats. If methylene blue diminished the affinity of hemoglobin for carbon monoxide, this comparison would have demonstrated it. If it protected or aided the oxidative ferment of the tissues or in any other way acted as an antidote, the methylene blue rats would have outlived the others.

In the next experiment, ten rats of equal weight were placed under a bell jar and gassed as in the previous experiment. When almost at the point of death, they were all removed at once and five, chosen at random by a disinterested person, were injected with a methylene blue solution of 20 mg per kilogram. The other five were injected with a similar volume of saline solu-

<sup>7</sup> Geiger J. C. Methylene Blue Solutions in the Treatment of Carbon Monoxide Poisoning. Report of Cases J. A. M. A. 100 1103 (April 8) 1933

<sup>8</sup> Sayers R. R. and Yant W. P. The Tannic Acid Method for the Quantitative Determination of Carbon Monoxide in the Blood. Bureau of Mines Technical Paper 2356 May 1922

tion The time required for recovery was then noted Our choice of a criterion for recovery differed somewhat from that of Brooks, for we find that even normal rats in Connecticut do not without considerable urging "run straight forward" We placed all of the unconscious rats on their backs and used as the index of recovery the righting reaction when the animals of their own accord rolled over and assumed their normal posture The times required for this degree of recovery in the rats treated with methylene blue were respectively 5, 5, 7, 8 and 8 minutes, a total of 33 minutes, for the rats receiving saline solution the times were 4, 5, 7, 7 and 8, a total of 31 minutes

#### EXPERIMENTS ON DOGS

A second series of experiments was carried out with dogs as the experimental animals Seven dogs were gassed with carbon monoxide to a point just short of respiratory failure On removal from the atmosphere of carbon monoxide, a blood sample was drawn and the percentage saturation of the hemoglobin was determined by means of the Van Slyke blood gas analysis

#### Comparative Results on Dogs Treated with Methylene Blue and the Untreated Controls After Carbon Monoxide Asphyxia\*

Animals Treated with Methylene Blue	Percentage Saturation with Carbon Monoxide			Percentage of Methemoglobin	Condition Next Day
	End of Gassing	Response to Pinch	Able to Walk		
Male 12 Kg	79	65	40	7	Trembling ill and weak
Male, 12 Kg	81	Died 7 minutes after injection			Dead
Female 10 Kg	78	28	14	12	Staggering and ill
Female 10 Kg	82	64	30	8	Very weak
Control Animals					
Female 10 Kg	82	72	43	0	Normal
Female 14 Kg	81	70	50	0	Normal
Male 13 Kg	80	68	46	0	Normal

\* The animals receiving methylene blue were responsive to a pinch in 10, 8 and 9 minutes respectively the controls in 10, 12 and 8 minutes Those treated could walk in 20, 24 and 31 minutes the controls in 22, 27 and 20 minutes

apparatus Four of the dogs were at once given methylene blue, 10 mg per kilogram, by intravenous injection The remaining three dogs as controls were injected intravenously with a like volume of physiologic solution of sodium chloride The animals were carefully watched, and as soon as each became sufficiently conscious to respond by moving when pinched on the legs, a second blood sample was drawn A third blood sample was taken at the time the dogs were able to walk after being placed on their feet and urged to move

The percentage of the hemoglobin converted to methemoglobin in the second blood sample was determined by the method of Van Slyke and Hiller<sup>9</sup> The results of these experiments are given in the accompanying table

It will be seen from this table that the two groups of animals were gassed to almost exactly the same degree In those which were then treated with methylene blue, marked hyperpnea occurred, and the amount of carbon monoxide in the blood decreased more rapidly than in the untreated controls But this advantage

was counterbalanced—indeed, more than counterbalanced—by the formation of methemoglobin and by other deleterious effects The general condition of the treated animals from a quarter to half an hour after the gassing was not better than that of the untreated In fact, one of those that received methylene blue died a few minutes later At the time when the animals first responded to pinching of the legs, the carbon monoxide combined with hemoglobin averaged for the controls 70 per cent with no methemoglobin For the dogs treated with methylene blue the response did not come until the carbon monoxide hemoglobin had fallen to an average of 52 per cent, with from 7 to 12 per cent methemoglobin At the time when the animals were able to walk, the control dogs showed an average carbon monoxide hemoglobin of 48 per cent Those treated with methylene blue showed an average of 28 per cent of carbon monoxide hemoglobin with presumably the same methemoglobin as before

In other words, the control animals were sufficiently recovered from asphyxia to respond to a pinch with only 30 per cent of their hemoglobin free, and to walk with 52 per cent free for the transportation of oxygen The treated animals were not recovered to these degrees until they had 39 and 63 per cent of their hemoglobin again in functionally useful form The difference between these two pairs of figures indicates the accessory ill effects of methylene blue In this respect methylene blue resembles such drugs as cyanide and lobeline

Lobeline also was once advocated as a resuscitant but has now been generally discarded There are many such drugs, all of which induce a temporary increase of respiration and thus promote the elimination of carbon monoxide But no drug has yet been found, with the exception of carbon dioxide diluted in air or oxygen, that has not a greater effect as a poison than as a remedy in the treatment of asphyxia

The most striking difference between the two groups of animals—the controls and those treated with methylene blue—was evident on the following day At that time the control animals were active and appeared in every way normal On the contrary, the dogs that had survived after injection of methylene blue were all ill, they appeared lethargic and their legs shook on standing

#### CONCLUSIONS

There is no valid basis, theoretical, experimental or clinical, for the belief that methylene blue is an antidote for carbon monoxide asphyxia

The chief effect of methylene blue is to convert some of the hemoglobin of the blood into methemoglobin By thus further diminishing the oxygen carrying capacity of the blood, methylene blue acts as a synergist with carbon monoxide in promoting asphyxia It probably exerts also other deleterious effects

Experimental evidence is here presented showing that the administration of methylene blue in carbon monoxide asphyxia may induce fatalities that would not otherwise occur Illness attributable to the effects of methylene blue persists after recovery from carbon monoxide asphyxia

These conclusions reinforce previous evidence that hypodermic and intravenous medication is more likely to be injurious than remedial in the treatment of carbon monoxide asphyxia<sup>10</sup>

4 Hillhouse Avenue.

<sup>9</sup> Van Slyke, D D and Hiller, A E quoted by Peters J P and Van Slyke, D D Quantitative Clinical Chemistry Baltimore 2: 349 1932

<sup>10</sup> Henderson Yandell Resuscitation J A. M. A. 83: 758 (Sept 6) 1924

## PROGRESS IN THE DIAGNOSIS OF TUBERCULOSIS

WITH SPECIAL REFERENCE TO THE X-RAYS

J ARTHUR MYERS, MD

MINNEAPOLIS

During the past five years progress in tuberculosis has advanced very rapidly. Apparently it has been a golden age as far as practical diagnostic, therapeutic and preventive work is concerned. Advances are being made in so many places that it is becoming difficult for one to keep informed on even the major activities. While reading an article on tuberculosis, published about 1917, I was impressed with the quite recent origin of several present well established facts. The contrast was as apparent as that between an article on malaria fever published in 1824 and one published in 1932.

In the first half of the last decade the foundation was laid, and during the second half the superstructure was being built. Controversy and debate have been replaced for the most part by work, which is resulting in actual accomplishment. There are still a few so-called controversial questions such as 1. Is the reinfection which causes illness more often of exogenous or of endogenous origin? 2. Is the first infection which results in a positive tuberculin reaction an asset or a liability to the individual? 3. Is the positive tuberculin reaction a manifestation of allergy or of immunity? 4. Is it possible to produce immunity in the absence of allergy? The new view on some of these questions is contrary to that which many workers were taught as students which they have taught themselves and which they still believe. Doubtless, some of these questions will continue to be controversial, that is every time the members representing the new and the old schools come together, debates will ensue. Such debates stimulate thinking, thinking leads to investigation, not only on the part of the debaters but also on the part of their audience. When such debates are over there is no reason for the existence of personal enmity and malice but every reason why all concerned should go forth seeking every available bit of evidence and producing new evidence. The truth is, most of the remaining points of controversy are not of any great significance in the actual tuberculosis work.

Most workers are agreed on the major factors in prevention, treatment and diagnosis. For example, the ardent advocates for universal infection with tubercle bacilli in infancy and childhood have come to believe that it is now wiser to postpone the first infection with tubercle bacilli, whether of human or of bovine type, just as long as possible. In short, the protection of the body from exposure to tubercle bacilli with the hope that many will live out the span of life without contamination with tubercle bacilli, is the more desirable course. Some are now in a quandary as to whether an avirulent strain of tubercle bacilli such as BCG, should be introduced into human bodies with the hope of producing immunity. This group, at least in America, apparently is very small. It appears that the vast majority of workers prefer to protect against exposure rather than resort to a method of immunization that has been so seriously questioned.

A decade ago, any one who ventured to discuss the tuberculin test from the point of view of its value in diagnosis beyond the period of infancy and early childhood was looked on by many physicians as an impractical enthusiast. Such a physician could rarely find enough persons who agreed with him to debate with members of the opposing school. Some of the profession even tried to discourage veterinarians, who had a vision of tuberculosis control among animals, by discrediting the tuberculin test and stating that eradication of the disease among animals was a physical impossibility. Today, tuberculin is looked on as the most accurate diagnostic agent we possess, both in human and in animal medicine, and the school of physicians that formerly insisted on its lack of practical value has undergone almost total dissolution. For those who have actually used the test extensively, among either human beings or animals, no further evidence is necessary to convince them of its practical value in diagnosis. Most of this change in the point of view has come about during the past five years.

About ten years ago a person who was performing artificial pneumothorax in any considerable number of cases was looked on by many physicians as a dangerous and radical practitioner. To institute artificial pneumothorax when a diagnosis of tuberculosis was first made, regardless of the stage of the disease, was considered almost malpractice. Most physicians believed that such treatment was very drastic and that it should be employed only as a last resort and that no patient should have such treatment instituted until he had been given bed rest for from three to six months or more in the hope that nature would bring the disease under control. Today it is not uncommon for a patient to have his first examination and, if frank pulmonary tuberculosis is detected and the case is suitable for artificial pneumothorax, to have that treatment instituted the same day. To advocate the use of artificial pneumothorax in minimal but progressive tuberculous lesions is no longer looked on as sacrilege. Even to treat carefully selected cases of pulmonary tuberculosis by artificial pneumothorax alone has been found adequate by a number of physicians who have instituted this practice. Such rapid advance in knowledge has taken place during the past five years that today this form of collapse therapy is looked on as a standard method of treatment. Therefore, the large school of physicians who formerly bitterly opposed collapse therapy no longer exists.

About 1920 there was considerable debate as to the value of roentgenograms in the diagnosis of tuberculosis. A school of physicians of considerable size strenuously opposed its use on the ground that physical examination was sufficient. This group has been reduced to a mere handful. The manufacturers of films and other x-ray equipment have done such marvelous work that the finished x-ray film of today is far superior to that of a decade ago. However, much remains to be done before the film becomes a fine screen in diagnosis, nevertheless, it is already sufficiently good that those engaged in practical diagnostic and follow-up work of chest lesions need no further evidence concerning its great value.

What has happened to the physicians who formerly so strenuously opposed the new views concerning diagnosis, treatment and prevention of tuberculosis? They were not executed, they were not driven out of medicine, nor by any means have all of them died. The vast majority of them were working in the light of the

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best knowledge of their time. They were clinging to the teachings of their alma maters, but all the time their minds were open. Nevertheless, they demanded evidence and, as such evidence accrued, one by one they joined the opposing school until today physicians are very much in agreement on the major factors of the diagnosis, treatment and prevention of tuberculosis.

There is very little likelihood that the profession will remain where it is. Perfection is still a long way off and, as the necessities are recognized, a solution will be found. A notable example is the field of tuberculosis surveys. That the tuberculin test is the finest screen for detecting the persons of a community who have foci of tuberculosis in their bodies is no longer doubted, but the tuberculin test is only part of an examination, that the roentgenogram of the chest of positive tuberculin reactors is another part of every satisfactory examination, almost every one admits. The tuberculin test can be administered quickly and cheaply. Therefore, it has been quite extensively used. The previous method of making roentgenograms was a slow one and involved considerable expense. To make films of the chests of large numbers of university students, school children, industrial groups and the like with present equipment has been so slow that often weeks and months elapse after the work is begun before the last chest film is made. If frank tuberculosis is present in the chests of individuals last examined, it has had an opportunity to spread, and the bacilli may have been disseminated to many associates. Thus, the demand has arisen for a rapid method of making roentgenograms of the chest. An attempt to meet this demand was made by the Queensboro Tuberculosis and Health Association and the Powers Photo Engraving Company. To one who has seen the work of these organizations almost in its beginning, 1931, and followed it subsequently, it is most striking how in such a short time the demand for a rapid method of making x-ray films of the chest could be met so well.

The first problem was to produce a film that required as little handling as possible. The result was x-ray paper films in rolls each roll large enough for 100 or more exposures. The next need was to make many exposures in a short time. This was met by the use of special attachments to the x-ray equipment, some of which were automatic, and a water-cooled x-ray tube. Already a device is in use which easily makes 150 exposures an hour. This rate can be maintained for five or six hours a day with two operators and for eight or ten hours a day with three operators. Under pressure of time, as many as four exposures have been made in a minute. The roll of film is developed intact, after which it is quickly dried. The developed roll is then placed in a special device, where in a short time all the pictures can be viewed.

Paper x-ray films have been produced several times in the past. In fact, the subject of paper films in chest radiography has been favorably<sup>1</sup> and unfavorably discussed.<sup>2</sup> However, in neither did the new film recently produced in New York come under consideration. Apparently, this new film is definitely superior to any previously manufactured.

Some questions naturally arise, such as What are the advantages and disadvantages of these films from the standpoint of diagnosis and the like? Where have they been used? and What has been the result? Barnard,

Amberson and Loew<sup>3</sup> made exposures first on celluloid film, then on the new paper film in 1,000 cases. They then made a comparative study of the two methods. They say

Paper films used by us do not produce chest roentgenograms of quite the same clearness as do celluloid films. The difference, however, is not sufficient greatly to impair the value of the paper film for practical diagnostic purposes. In the interest of public health, the slight diagnostic error would be much more than offset by the possibility of examining larger groups of people by this method. In view of the smaller expense, we therefore believe that the paper film may be advantageously used for chest roentgenograms of large groups of school children or other persons, provided those with doubtful shadows are again x-rayed with a celluloid film. The paper film may also be found useful for other purposes by some workers according to their peculiar needs.

From personal observation, I am firmly convinced that the paper film is of value not only in diagnostic work but also in making serial x-ray records of lesions after they have been detected. Such records have become necessary in studying the effect of treatment on pulmonary lesions. In cases on collapse therapy, particularly pneumothorax and phrenic exeresis, the paper film records the extent of collapse and like conditions excellently. I am told by those engaged in other phases of medicine such as orthopedics, that the paper film in its present stage of development is adequate for a considerable part of their x-ray work. Other advantages cited are that the paper film burns more slowly than uncoated paper and gives off no noxious fumes when burning and that data concerning the patient may be written on the front or back of the developed film.

Paper film in rolls has been used in making exposures of chests of about 11,000 school children in Queensboro (these children are to be reexamined by x-rays every year for about four years), the entering class of the Bellevue Medical College (1932), 6,000 high school and junior high school students in New Haven, Conn., and about 11,000 children and adults in the Harlem district of New York. In addition to the rapid camera work, paper films for ordinary single and stereoscopic roentgenograms are now in use in several states, including Illinois, Indiana, New Jersey, Montana, Virginia, Alabama, Ohio, Minnesota and Massachusetts. The cost of the paper film is approximately half that of the ordinary film, so that when the rapid method is used, which necessitates so little handling of film, the cost of the finished product is markedly reduced.

There is one danger against which the medical profession must guard, it is that this rapid method of making x-ray films and the necessary equipment may get into the hands of those who are overenthusiastic and unqualified, as heliotherapy did. The manufacturers are anxious to prevent this and are ready to cooperate fully with the medical profession. Although the paper film is not all that one desires, it is still very much worth while. No one has claimed that it is superior to the modern transparent film in clarity. However, it is highly satisfactory when properly used in case-finding work. Moreover, from the standpoint of clarity, the paper film of today is superior to the

<sup>3</sup> Barnard Margaret W. Amberson J. B. Jr. and Loew M. F. The Technique of Using Paper Films for Roentgenograms of the Chest. *Am. Rev. Tuberc.* 25:752 (June) 1932. Amberson J. B. Jr. Barnard Margaret W. and Loew M. F. Comparative Value of Paper and Celluloid Films for Roentgenograms of the Chest. *Transactions of the Twenty-Eighth Annual Meeting of the National Tuberculosis Association* 1932. Barnard Margaret W. The Adaptability of Paper Roll Film in Roentgenography. *Quarterly Bulletin of the Milbank Memorial Fund* 10 April 1932.

<sup>1</sup> Paper Films in Chest Radiography. *Lancet* 2: 247 (July 30) 1932.  
<sup>2</sup> Deutschen Röntgenesellschaft, Fortschr. a. d. Geb. d. Röntgenstrahlen 40: 608 1932.

celluloid film of a few years ago. The manufacturers have definitely improved the paper film from time to time and are of the opinion that it will be further improved in the near future. The first consideration of the entire medical profession is the control of disease, hence such an advancement as the rapid method of exposing and developing x-ray films and the manufacture of the paper film should be accepted with alacrity. Here is a method which will make possible the use of that very valuable diagnostic aid the x-ray film for large groups of people who would otherwise be denied it. Wherever a survey is to be made, it should be not only with the consent but under the direction of the local medical society. This will insure the keeping of the survey on a sound foundation so the tuberculin tests and x-ray films will be properly interpreted, and those found to have evidence of disease can be referred to their family physicians for any necessary treatment.

The following statements by Dr. John L. Rice,<sup>4</sup> health officer of New Haven, Conn., confirm some of these statements and illustrate its use.

During the month of November [1932] the New Haven Department of Health and the Board of Education undertook a special piece of tuberculosis prevention work among school children. Within a period of eleven school days, 6,400 children of high school and upper grade age had chest x-ray pictures taken. The pictures of all pupils except ninety were paid for by the respective parents. Recently a new method of obtaining x-ray pictures has been devised and its value demonstrated. In this new method the pictures are taken on paper instead of celluloid. The paper films are utilized in rolls and the portable x-ray apparatus so regulated that pictures can be taken at the rate of three to four a minute. The films are developed in rolls of a hundred or more exposures and interpreted under reflected light by merely unrolling the long sheets on an appropriate apparatus.

This large group of x-ray pictures is now being studied by Dr. Edwards. The pictures will eventually be returned to the pupils after the information of value has been put in the hands of the family physicians. Many physicians and x-ray men have seen these pictures and there is surprise and enthusiasm at the uniformity, clarity and detail presented. It will be some time before all of the pictures are studied and interpreted but the first 700 high school students studied and perhaps the best group physically, show 91 per cent of suspicious or manifest disease as follows: suspicious 55 per cent, childhood type, 3.2 per cent and adult type, 0.4 per cent.

This work will make it possible to pick out the children who have had enough infection to have produced a variable amount of disease which can be seen in a picture. It will also provide an opening to follow into homes and perhaps discover unrecognized sources of infection.

In any such survey, the medical profession must be extremely careful that the public is informed that the low cost is solely for survey work, since it does not include interpretation of the film. The charge for roentgen examinations in the private practice of medicine has never been based on the cost of materials but rather, as it should be, on the professional knowledge required to interpret the shadows. Any one can look at an x-ray film, but to be able to interpret it properly requires long years of training. When a physician is called to the home of a sick person, his fee for such consultation is not based on the instruments and materials used, for they may consist only of a stethoscope, but his special senses have, through years of training, been so developed that through them he is able to elicit evidence which is most apt to lead to an accurate diagnosis. Again, his years of training in

therapy lead to advocacy of such therapeutic measures as will result in the best chances of recovery for the patient. In prescribing the treatment, perhaps all he uses is a pen and a prescription blank. His fee is based on his ability to diagnose and treat the disease, rather than on actual materials used. The same situation obtains in the interpretation of an x-ray film. With survey work the cost to date for x-ray films has included practically nothing but material. The interpretation of the films has for the most part been an act of charity on the part of physicians. In private practice the difference between the cost of paper and celluloid films is an insignificant part of the charge to each individual patient, but, if a medical society cooperating with a tuberculosis society with limited funds desires to make films of the chests of 100,000 persons who otherwise would not have x-ray film work done, the difference in cost of materials alone would be approximately \$30,000.

Tuberculosis surveys often bring to light some very definite but unsuspected cases of tuberculosis. Such results prove to the public the great value—in fact, the necessity—of the x-ray film as a part of an examination. This new x-ray development is another advantage that our predecessors lacked.

#### SUMMARY

Although there are still a few controversial subjects in the field of tuberculosis, they are of minor significance. Ten years of careful observation and study has resulted in complete reversal of the views in the major factors of this work, such as the tuberculin test and the roentgen examination.

Transparent x-ray films now in general use have been greatly improved in the past decade but still are not all that could be desired.

The present equipment for making x-ray films is too slow in operation for the increased demands for greater numbers of x-ray examinations. The new rapid x-ray camera meets the demand by making with ease from 500 to 1,000 exposures a day.

The new paper x-ray film in rolls has reduced the cost of films by about one half.

No one has claimed that the paper film yet reveals the same detail as the transparent film, but the difference in clarity is slight. Conservative observers with much experience have estimated it to be not more than 10 per cent.

The new paper film, at least in its present state of development, will not displace the transparent film for certain types of work. Those who have accomplished so much by way of refining the transparent film should be encouraged to continue their efforts to improve it, with the hope that eventually it will reveal much more detail than it does at present.

The new paper x-ray film should not affect the cost of x-ray work in private practice, since the major part of the charge made the patient in the past has been based on the physician's ability to interpret the shadows.

The medical profession should support this rapid and much cheaper method of making roentgen examinations, since it has real merit and since it makes roentgen examinations possible for large numbers of persons who otherwise would not have them. By so doing, it will be kept out of the hands of unqualified individuals and organizations, yet it will be fully utilized within the limits of medical science.

730 La Salle Building

<sup>4</sup> Rice, J. L. X-Raying Over 6,000 School Children in New Haven. *Health Officers World* 1: 9 (Jan.) 1933.

## Clinical Notes, Suggestions and New Instruments

### ASPERGILLOSIS A CASE OF POSTOPERATIVE SKIN INFECTION

LOUIS FRANK M.D. AND O. M. ALTON, B.S.  
LOUISVILLE, KY

Since our student days we have been familiar with the fact that molds may at times be pathogenic in their action. Attention had been called to this pathogenicity even before Virchow's work in 1856 describing the infectious process and identifying the organism. Baumgarten in his "Mykologie," published in 1890, describes the lesions resulting from experimental injections of *Aspergillus niger* and discusses very fully the pathologic changes and the microscopic observations.

Myers and Dunn<sup>1</sup> reported a case of aspergillosis in which the infection was located on the dorsal aspect of the hand of a farmer. The lesion was in the nature of a granuloma.

Most often this infection is seen in the auditory canal and in the lungs. In the lung it may run a very chronic course and defy accurate diagnosis for a long time. In the auditory canal it is a question whether the mold acts as a true pathogenic organism or is present as an epiphyte. In the lung, however, it is truly parasitic or pathogenic in character.

Recently our attention has been called to a postoperative dermatosis due to *Aspergillus* and, having seen two previous cases, we have thought the matter of sufficient interest to record, also, we have noted no similar postoperative skin infections reported in the literature.

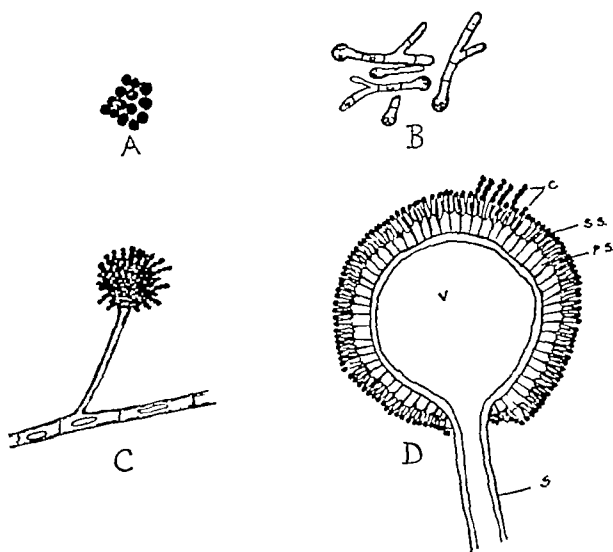
A woman, aged 40, was operated on for abdominal tumor, the operation being devoid of any feature worthy of comment. The usual preoperative local preparations were made and the usual dressings applied. At the end of about sixteen days, the dressings were removed and revealed what has been observed on two other occasions, namely, the dressing had the appearance of being studded with black powder, and at one end of the wound, near the site of one of the lower stay sutures, there was a spot that had the appearance of a large ulcer, about 1½ inches (37 cm.) in diameter, with sharply defined edges, slightly elevated and filled with a yellowish-black material resembling pus. In addition, at various points in the skin under the gauze dressings covering the wound were pustules varying in size from one-sixth to one-fourth or three-eighths inch in diameter. They were elevated, contained a purulent looking material varying in color from yellowish, in the smaller, to almost black in the larger pustules. They were quite superficial and did not penetrate through the true skin except for the large ulcer-like area at the stay suture, which showed the black discoloration not only over its entire base but also in the depths of the suture tract. The edges of all were sharply defined with the slightest margin, possibly a line in thickness, of redness circumscribing the pustule. As stated, the infection did not extend beyond the gauze pad used as dressing and was definitely confined to this area. As a result of this observation, it was at once recognized that we had encountered an implantation of a species of mold fungus, most likely *Aspergillus niger*. There was no postoperative elevation of temperature nor any other untoward symptoms. Following exposure of the wound field to air and washing with iodine and alcohol, the apparent ulcers and pustules had entirely disappeared by the next morning, leaving dry, slightly scaly, areas outlined by a faint red line to show where they had been.

The history and the appearance is characteristic of three cases observed. The first was seen thirty years ago and the second about twelve years ago, each of them exhibiting similar pustulation confined absolutely to the area of the gauze dressing and healing rapidly after exposure and painting with 3 per cent tincture of iodine followed by alcohol and dressing applied so as not to exclude air. A photograph of the second case, which followed an emergency appendectomy, failed to show the details sufficiently to warrant publication.

At first the inclination was to construe the aspergillus found in these cases as truly pathogenic in character, but after consideration one may come to the conclusion that this is not true and that the condition can be called an infection only in the broadest use of the term. The explanation may be that following the preparation of the patient's skin there is in the operating room atmospheric contamination by this organism. It is sealed up by the dressing, skin reaction ensues, blebs are formed under the adhesive plaster or any other dressing that may be used, and the serum in these blebs furnishes a most desirable pabulum for the growth or there may be a bit of oozing from a stay suture stitch hole or from the lips of the wound, and such would act as an excellent culture medium.

Culture of other packages of dressings put up at the same time as those used in this case proved absolutely sterile, nor was there any evidence of any skin infection in any other clean case in which operation was performed the same day or on previous or subsequent days.

Of the 375 species of *Aspergillus*, 57 are pathogenic, and 40 are pathogenic for man. The majority of pathogenic species have been found in the ear. These organisms have also been found in the lungs, bronchi and throat about the nails in an ulcerated cornea and in the feces. The organisms were isolated from the beards of two Africans by Castellani.



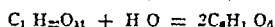
*Aspergillus niger*. A conidia B twenty four hour growth showing young mycelium C mature organism D cross section of conidiophore (c chains of conidia, ps primary sterigmata ss secondary sterigmata s stalk v vesicle)

The specimen sent to the laboratory consisted of the surgical dressings covered with a dark powder. This powder was planted on Sabouraud's maltose agar and potato. A rich growth was obtained on the agar in twenty-four hours and on the potato in seventy-two hours. Spores were then planted in Sabouraud's maltose agar between a coverslip and slide and the growth was followed under the microscope from a single spore to maturity. This microscopic slide culture method has been invaluable to us in the study of fungi.

The organism has been identified as one of the strains of *Aspergillus niger* but differs somewhat from any of the strains already described, as will be seen from the drawings. The characteristics of these organisms are as follows: colonies growing rapidly and becoming very black on the surface after several days, with abundant submerged mycelium, mycelium colorless, aerial hyphae scantily produced, globose, superficial conidia, stalks mostly arising directly from the substratum, some uncolored and some yellow to brown only near the vesicle, smooth, with walls thick and without pits but frequently uneven on the inner surface. The mycelium is septate, each hypha having a distinct nucleus. The vesicle is globose, thick walled and a yellow brown. The sterigmata are both primary and secondary.

From the Department of Surgery, Norton Memorial Infirmary  
1 Myers J. T. and Dunn A. D. *Aspergillus* Infection of the Hand J. A. M. A. 95: 794 (Sept 13) 1930

Large numbers of calcium oxalate crystals were found in Sabouraud's maltose agar near the growing organisms. The disaccharide maltose is hydrolyzed by the enzyme maltase produced by this aspergillus and is broken down into two molecules of the monosaccharide dextrose



Citric acid is then fermented from the dextrose as an intermediate product



This reaction is not fully understood. Buchanan thinks that possibly the acid is synthesized from some of the decomposition products of the sugar.

Oxalic acid is formed from the citric acid. When the acid formed is neutralized by the addition of chalk, one half of the calculated theoretical yield is obtained.

This is an interesting phenomenon. The finding of large numbers of calcium oxalate crystals in the mediums may give one an immediate lead as to the type of organisms present.

614 Hexburn Building

#### REPORT OF CASES OF CARBON MONOXIDE POISONING TREATED BY METHYLENE BLUE INJECTION

A. W. CHRISTOPHERSON, M.D. HERMISTON, ORE

I wish to report further confirmative evidence of the value of methylene blue (methylothionine chloride U. S. P.) in the treatment of carbon monoxide poisoning.

Recently five men were brought to me for emergency treatment following a mysterious poisoning. They had been working with a road construction crew and were blasting rock in a tunnel measuring 6 by 10 by 115 feet. The blast was set at the depth of the tunnel and ten minutes later two of the men entered the tunnel to commence work. After a few moments one of them sensed the danger and warned the other to run. The latter collapsed almost immediately and the former ran but collapsed at the mouth of the tunnel where he was dragged to safety. One man ran into the tunnel and rescued the fallen man but he also collapsed when safely within reach of others. These three were rushed to the hospital, where I attended them.

Within thirty minutes two more men were brought to the hospital. One had entered the tunnel with an air hose to blow the tunnel clean and in a few minutes he collapsed. Another witness rushed in and placed the victim on a belt conveyor and both were brought to safety.

I immediately diagnosed the cases as carbon monoxide poisoning and put all to bed with high elevation of the foot of the bed, external heat, and pure oxygen inhalation. Three required caffeine sodobenzoate and two, atropine sulphate for cardiac and respiratory stimulation.

Two of the men were profoundly comatose and required artificial respiration as their voluntary respirations varied from three to five per minute. Their pulses were weak, rapid and irregular. Their color varied, the younger man, about 28 years of age and robust, was flushed pink from head to foot, the other, a man of 55 who had dissipated heavily, was cyanotic and in convulsions.

An attempt was made immediately to obtain ready prepared methylene blue, 1 per cent for intravenous injection, but as it was not available, a solution was prepared locally. An hour had elapsed when the solution was ready and as the two severely affected patients appeared unimproved they were both given 50 cc of the solution. Before the injection was completed, they became conscious and talked rationally. Both made rapid, uneventful recoveries and, while more cautiously handled, seemed to have recuperated sooner than the three remaining patients.

The remaining cases responded promptly to the oxygen and the dye was not used. One of these patients later had the stormiest recovery of the lot and is the only one remaining under my care at this time, having a local systolic murmur over the heart apex, which may or may not be organic.

It would appear that the methylene blue had a remarkably specific action in these cases of carbon monoxide poisoning.

## Council on Pharmacy and Chemistry

### REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING  
REPORTS  
PAUL NICHOLAS LEECH, Secretary

#### NAIODINE NOT ACCEPTABLE FOR N. N. R.

"Naïodine" is a product of the Emile Logeais Laboratories of Boulogne sur Seine, France, distributed in the United States by E. Tougera and Company. It is proposed for subcutaneous intramuscular or intravenous injection for the relief of pain from whatever cause.

The advertising material for Naïodine, widely promoted to the medical profession, is pernicious. Rarely today can one read claims of therapeutic usefulness more imaginative in conception or less supported by fact.

Naïodine is claimed to be a "one per cent solution of hyperactive sodium iodide (NaI) stabilized by a special process, exclusive of any other active principle, toxic or otherwise."

There is no chemical method known to the Council whereby a simple, highly ionizable salt like sodium iodide can be rendered "hyperactive," whatever that may mean. The implication in the advertising circulars that this iodide preparation is of a special order of therapeutic effectiveness is highly improbable. It is well known that the addition of small amounts of alkali, preservation in hard glass, and protection from light may tend to prevent the decomposition of iodide solutions.

The following are some of the claims made for this preparation.

"NAIODINE is indicated for the relief of pain and distress whatever the organ affected whatever the site of pain and whatever the nature of the pain or distress present whether it be due to neuralgia, neuritis, spasm, inflammation, sympathetic pain, anguish or anxiety [Italics ours]."

NAIODINE is as powerfully effective against the anguish accompanying the withdrawal treatment in cases of toxicomania as it is against the so-called essential sciaticas, the crises of asthma, sinusalgia, the tarsalgia affecting adolescents, uterine or ovarian pain in dysmenorrheal patients, pain present in advanced cancer, myalgia, rheumatic or rheumatoid pain and the like.

In brief, NAIODINE constitutes a type of sedative preparation, a faithful antispasmodic and an analgesic. It may be added that the injection of NAIODINE is painless.

The sodium iodide present in NAIODINE when introduced parenterally possesses a veritable neurotropic effect. When absorbed by the capillaries it progressively impregnates the nerve centers, somewhat as bromides impregnate them, diminishes and suppresses promptly their sensitivity to pain. Large doses must be employed from the very first and must be repeated without hesitation. There is no reason whatever for hesitating since Naïodine is atoxic and since it produces no modification whatever of the respiratory or circulatory centers.

Injectable NAIODINE permits atoxic treatment of all algic states. It replaces morphin and other analgesics, all of which are toxic. Naïodine is Atoxic and Painless. Any dosage may be injected without the least difficulty. It has no contra-indications.

Use and dosage. The Treatment of Attack by massive doses 20 to 30 cc. daily given in one or several injections. Maintaining Treatment with diminishing dosage 10 to 5 cc. daily. Injections in any muscular mass, deep subcutaneous or intravenous.

Naïodine is further recommended for "sciaticas, lumbagos, shingles, trigeminal neuralgias, syphilitic and rheumatismal iritis, dyspnea, angina pectoris, asthma, pulmonary emphysema, toxicomanias, phlegmons, burns, acute arthritis, painful chronic arthritis, acute otitis, etc."

A brochure also is distributed, composed about a photograph of a woman's head in marble reproduction, at the bottom appears "Naïodine—cure atonique", in one margin, "ne plus souffrir," repeated several times in type of diminishing size.

Naïodine is claimed to be absolutely atoxic, now here is there mention of the possibility of iodism, of anaphylactoid reactions from intravenous injection, or of the possibility of inducing serious or even fatal pulmonary edema in susceptible individuals, particularly in the pathologic pulmonary conditions for which Naïodine is recommended. The routine use of injections of sodium iodide to replace "morphine and other analgesics" as

advised in the advertising should be vigorously condemned. The advisability of parenteral administration of iodides in general is open to serious question, as these salts are readily absorbed from the intestinal tract. To the Council's knowledge, it has not been demonstrated that oral administration of adequate dosage is inferior to parenteral injection in producing all the known iodide effects (with the exception of the anaphylactoid response to intravenous injection). The claim for a "neuronotropic" effect of sodium iodide gives the impression of pure confabulation, it is well known that administered iodide is not retained in appreciable quantities in nerve tissue.

The Council declared Naiodine unacceptable for inclusion in New and Nonofficial Remedies, because it is an unscientific preparation of uncertain composition (rules 1, 2 and 10), for which unwarranted and fantastic therapeutic claims are made (rule 6), and because it is marketed under an objectionable proprietary name (rule 8)

#### VI-CRIS NOT ACCEPTABLE FOR N N R.

Vi-Cris is the uninforming proprietary name under which Vi-Cris, Inc., Detroit, markets a mixture proposed for use as an antiseptic on mucous or skin surfaces and stated to consist of 1 per cent each of gentian violet (later qualified as Crystal Violet 6BN) and Brilliant Green dissolved in a mixture of grain alcohol 35 per cent and water 65 per cent. The specifications for the composition of crystal violet 6BN as furnished by the manufacturers indicate the insoluble matter as 1.98 per cent and the ash as 4.68 per cent. Both of these values exceed the maximum permitted for gentian violet medicinal-N N R (1 per cent in each case). No statement of composition appears on the carton, on the label or in the advertising.

The proprietary name Vi-Cris cannot be recognized, since this preparation is a mixture of two well known dyes and in no respect presents a distinct improvement over similar preparations in use.

No data are furnished in support of the firm's claim of "Powerful Antiseptic Properties" for Vi-Cris except several unsupported quotations attributed to several unnamed dentists in an advertising circular, and a report from "National Pathological Laboratories, Inc.," of Detroit. This report purports to give the results of a comparison of the bactericidal properties of mercurochrome, acriflavine, picric acid, iodine and Vi-Cris. The concentrations of only two of these substances are furnished, "sat. sol." for picric acid, and in the "twenty-four hour test, 2 per cent for mercurochrome. The method employed is not stated. The organism used is said to have been *Staphylococcus aureus* and not the standard typhoid bacillus. Phenol coefficients are not expressed. This report is therefore meaningless, no satisfactory evidence of therapeutic usefulness is available to the referee.

The advertising material is objectionable. Two circulars and one carton submitted reveal the following: "During a recent epidemic of IMPETIGO, Vi-Cris was the most successful antiseptic application." Vi-Cris is further claimed to be of value in erysipelas infections of the lips and face (which it is stated "spread rapidly" and "may reach the brain"), carbuncles, epidermophyton (for which it is said to be "cooling, soothing, penetrating"), endocervicitis, pus appendix, mouth and throat infections, cellulitis, chronic suppurating wounds and sinuses, Vincent's infection, pyorrhea alveolaris, and other conditions. It is stated that "Vi-Cris is superior to any single dye used alone", also that it is "First Choice" in either the medical or dental field of antiseptics.

On the carton Vi-Cris is said to be "A Perfect Family Antiseptic" (no less), to be good for, among other things, "Burns," "Insect Bite" and "Deep Seated Inflammations." "It soothes inflamed tissues and advances healing."

These unsupported, all encompassing claims require no further comment.

This mixture is similar to one which has already been considered by the Council, namely "Acriviolet" (J A M A 98:480 (Feb 6), 1932). Quotation is made from the Council's report on this preparation which is also applicable in the case of Vi-Cris: "there is no critical evidence of any

superiority of this mixture over gentian violet alone." The implication of superiority is therefore not warranted.

The Council declared Vi-Cris unacceptable for New and Nonofficial Remedies because it is a mixture of unscientific composition, undeclared on the label or in the advertising (rules 1, 2 and 10), because it is marketed under an uninforming, proprietary name (rule 8) with exaggerated and unwarranted claims (rule 6).

The foregoing statement of the Council's consideration of Vi-Cris was submitted to the firm Dec 28 1932. Mr N McKinstrie, president of the firm, replied (Feb 11, 1933) that the firm had undertaken the manufacture of Vi-Cris at the instigation of physicians who had found the use of this combination of dyes advantageous. The solution is said to have been in use for ten years, having been brought to this country by Dr W L Hackett, who obtained the formula from Dr Victor Bonney of Middlesex Hospital, London. Notwithstanding the criticisms of the Council, the firm expressed itself as still believing that "this solution is one of the greatest bactericides" and as being anxious and willing to market it in a strictly ethical manner. The firm asked the Council for assistance in selecting a suitable name and expressed a willingness to market the preparation in a plain bottle and carton with name and chemical formula only. The firm stated "There is a demand, we are going to meet this demand and there is no reason why we cannot do so ethically and with your approval."

A letter from Dr Hackett (Feb 8 1933) recites his experience with this preparation in Dr Bonney's clinic and states that in his experience "the solution has been the most satisfactory bactericide in my possession." A copy of a letter from Dr Bonney dated Jan 12, 1933, to Dr Hackett, forwarded to the Council's referee, recounts Dr Bonney's continued satisfaction in the solution as an antiseptic. Dr Hackett kindly loaned the Council's referee, through the secretary, a copy of the 1920 edition of "A Textbook of Gynecological Surgery" by C Berkeley and Victor Bonney, in which on page 35 this solution and its uses are described. The referee has not located an article on this preparation said to have appeared in the *British Medical Journal* May 15, 1915. That article is said by Dr Bonney to contain the suggestion on which this preparation was developed. Neither the "Textbook" nor any of these letters presents any data of controlled experiments. It is well known that both crystal violet and brilliant green are bacteriostatic for certain bacteria under certain conditions. It is known also that dentists and others make use of these dyes, singly or in combination, for antiseptic purposes. A letter from the secretary of the Council on Dental Therapeutics of the American Dental Association reports that a similar preparation is "in somewhat common use among dentists."

It is obvious that Vi-Cris cannot be made acceptable at this time. The marketing of the dyes as dyes would not involve the Council if no claims were made for their antiseptic action.

In view of the previous action of the Council with respect to Acriviolet, and in view of the fact that no new evidence has been supplied to establish the claims made for Vi-Cris, the Council voted to confirm its earlier decision that Vi-Cris is unacceptable for inclusion in New and Nonofficial Remedies.

#### TYRAMINE-ROCHE OMITTED FROM N N R.

Tyramine-Roche, a product of Hoffmann-LaRoche, Inc., Nutley, N J, was accepted in 1917 as a brand of tyramine hydrochloride-N N R, and has been reaccepted at the close of each acceptance period up to the close of 1932. At that time the Council's referee, in considering its eligibility for continued inclusion in New and Nonofficial Remedies, reported to the Council his conviction that the drug has not fulfilled the promise of usefulness under which it was accepted and has become of little or no therapeutic importance. The referee pointed out that the firm, for some years, has not submitted advertising for the product and is apparently making no effort to promote its sale.

The Council concurred with the referee's opinion concerning Tyramine-Roche and voted to omit it from New and Nonofficial Remedies.

## Committee on Foods

### GENERAL COMMITTEE DECISION

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISION ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING

RAYMOND HERTWIG Secretary

### GOOD FOOD ADVERTISING

Food advertising must be considered from the points of view of both the public and the food merchandiser. Sound advertising effectively serves the interests of both. The continued welfare of the food industry rests largely on the dedication of its advertising activities to the good of the public. It is essential therefore, to define proper food advertising.

Proper food advertising should use the common name of the food concerned or, in the case of a fanciful trade name, should identify the ingredients in the order of their decreasing proportions in the product. Such practice prevents deception. Any statement of the physical, chemical, nutritional or physiologic properties and values of the food should be truthful and expressed in simple common terms. Proper advertising is free from false implications. It does not create incorrect or improper inferences or comparisons between foods. It attempts to promote sales solely on the merits of the food article itself.

Good food advertising harmonizes with established authoritative knowledge popularly expressed. Meritorious foods require no exaggerated, false, misleading claims. The inferior food with alleged fictitious values requires gross superlatives and exaggerations, and flamboyant vague and mysterious claims. Good advertising discusses nutritional values but avoids specific health claims, it recognizes that health depends on the diet as a whole and on many factors other than foods and not on any one food brand or any one type of food.

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

#### BETTY JANE FLOUR (PHOSPHATE ADDED) (BLEACHED)

#### ROBIN'S BEST FLOUR (PHOSPHATE ADDED) (BLEACHED)

*Manufacturer*—The Robinson Milling Company, Salina, Kan.

*Description*—Hard winter wheat 'standard patent' flours admixed with 0.5 per cent calcium acid phosphate, bleached.

*Manufacture*—Hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds) and chlorine (three-fourths ounce per 196 pounds) and 0.5 per cent calcium acid phosphate is added.

*Claims of Manufacturer*—"Phosphated" flours for biscuit baking.

#### BABY RUTH CANDY

#### BABY RUTH BUDDIES CANDY

*Manufacturer*—The Curtiss Candy Company, Chicago

*Description*—Chocolate coated confection bars containing caramel dipped cores of fudge and roasted peanuts, prepared from peanuts, corn syrup, chocolate, sucrose condensed skim milk, coconut butter, salt, egg albumin, vanillin and coumarin.

*Manufacture*—The fudge center is prepared by boiling definite proportions of corn syrup, sucrose, skim milk, coconut butter,

salt, egg albumin and flavor, it is pumped into starch molds, which are mechanically emptied, and the centers are dipped into caramel. The caramel covered fudge centers are mechanically covered with roasted peanuts, after which they are mechanically enrobed with sweetened chocolate. The bars are cooled and wrapped.

#### Analysis (submitted by manufacturer) —

	per cent
Moisture	31
Ash	1.2
Fat (acid hydrolysis method)	31.7
Protein (N $\times$ 6.25)	11.4
Reducing sugars as dextrose	5.6
Sucrose (copper reduction method)	34.8
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	51.8

Calories—54 per gram 153 per ounce.

#### S & H SLICED BREAD

#### SANITARY HOLSUM S & H BREAD

*Manufacturer*—S & H Baking Company, El Dorado, Kan.

*Description*—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817), prepared from flour, water, sucrose, sweetened condensed milk, lard, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

#### MARTINELLI'S GOLD MEDAL SWEET PURE APPLE CIDER

*Manufacturer*—S. Martinelli and Company, Watsonville, Calif.

*Description*—Pasteurized sweet apple juice.

*Manufacture*—Sound, clean hand-picked ripe apples (Newton Pippins, Bell-Flowers, Permain and Missouri Pippins blended) obtained direct from farmers and apple packing plants are used, from the packing plants the grade is known as cider or drier apples, which are without stems, with skin blemishes due to rubbing in the trees, birds or insects, with sunburn spots or handling bruises, apples too small for packing or drying are used also.

The apples are rolled past inspectors, who discard badly bruised fruit showing signs of mold or rot, they are washed in an alkaline or acid solution to remove any arsenical spray (U. S. Dept. Agr. Bull. 1687), and are ground to a pulp, which is built up to a height of several feet in layers between heavy cotton cloths and wooden racks. The juice is expressed by pressure. The cotton cloths retain the coarse pomace, the juice is pumped continuously through a filter of tightly stretched canvas on frames of acid-resisting bronze. A filter aid of infusorial earth is used to facilitate filtration. Metallic contamination is avoided by the use of acid-resisting bronze equipment. The filtered juice is automatically bottled and sealed. The process from pressing to filling is continuous, no heat is applied. The bottled juice is pasteurized at 73 C. for thirty minutes.

The sealed cider keeps indefinitely. No sugar or preservatives are added.

#### Analysis (submitted by manufacturer) —

	per cent
Moisture	82.3
Total solids	17.7
Ash	0.3
Fat (ether extract)	0.0
Protein (N $\times$ 6.25)	0.1
Reducing sugars as dextrose	11.9
Sucrose (copper reduction method)	2.3
Carbohydrates (by difference)	16.9
Titrateable acidity as malic acid	0.4

Arsenic (As<sub>2</sub>O<sub>3</sub>) (individual samples) parts per million

0.34, 0.40, 0.36

Calories—0.7 per gram 20 per ounce.

*Vitamins*—The method of manufacture is believed to be as highly protective of the natural vitamin values as are any cider manufacturing methods now in use. The pressing, filtration, bottling and pasteurization processes are continuous, only a short time elapses between the pressing of the pulp, and the bottling of the juice. The cider is not heated in the open but is pasteurized in hermetically sealed bottles.

*Claims of Manufacturer*—Pasteurized apple cider conforming to the United States Department of Agriculture definition and standard for "fruit juice", contains no preservative.

**P M C MILK SUGAR (LACTOSE), NON-CASEIN SOLUBLE  
MILK PROTEIN MILK SALTS, INCLUDING CHLORIDES,  
PHOSPHATES AND CITRATES OF POTASSIUM,  
CALCIUM SODIUM AND MAGNESIUM**

**Manufacturer**—Protein Mineral Company, Inc., New York.

**Description**—Dried milk whey with added milk whey minerals, including lactose, non-casein milk protein and milk salts (chiefly chlorides, phosphates and citrates of potassium, calcium sodium and magnesium)

**Manufacture**—Liquid milk whey, a by-product of the manufacture of cheese, is filtered and the residual fat removed by centrifugation. The mineral content of the resultant whey is increased with precipitated minerals from a separate portion of whey obtained by the addition of sodium bicarbonate or ammonia solution to whey. The precipitate is washed with water to remove the alkali and added to the filtered defatted whey to the extent of 2 per cent. The resulting liquid mixture is dried at a low temperature, producing a white amorphous powder which is packed in bottles

Analysis (submitted by manufacturer) —	per cent
Moisture	5.0
Ash	9.9
Fat (ether extract)	1.5
Protein (N × 6.38)	13.0
Lactose (Bertrand method)	68.0
Carbohydrates (by difference)	70.6
Calcium (Ca)	1.73
Chlorine (Cl)	2.10
Iron (Fe)	0.011
Magnesium (Mg)	0.21
Phosphorus (P)	0.40
Potassium (K)	2.11
Sodium (Na)	0.68

**Calories**—3.5 per gram 99 per ounce.

**Claims of Manufacturer**—For increasing the lactose and calcium content of individual foods or the diet as a whole. Readily miscible with water or milk.

**READY FOR USE BISCUIT MIX  
(BLEACHED)**

**Manufacturer**—F B Chamberlain Company, St Louis

**Description**—Self rising flour containing patent flour (bleached) hydrogenated cottonseed oil, powdered skim milk, sucrose sodium acid pyrophosphate, salt, sodium bicarbonate and calcium acid phosphate.

**Manufacture**—The ingredients are thoroughly mixed in a batch mixer and packed in cartons

Analysis (submitted by manufacturer) —	per cent
Moisture	10.1
Ash	5.0
Fat (ether extract method)	11.1
Protein (N × 6.25)	8.9
Reducing sugars as dextrose	0.9
Sucrose (copper reduction method)	3.6
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	64.4

**Calories**—3.9 per gram 111 per ounce.

**Claims of Manufacturer**—For biscuit, waffles and cake baking. The keeping qualities have been thoroughly tested.

**CLAPP'S ORIGINAL BABY SOUP  
(ADDED SALT)**

**Manufacturer**—Harold H Clapp, Inc., Rochester, N Y

**Description**—Comminuted cooked soup stock prepared from potatoes, tomatoes, carrots, unpolished rice, cabbage, celery, meat broth, whole grain barley, salt, onions and water. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals

**Manufacture**—The potatoes, celery, cabbage, onions, rice and barley are carefully cleaned. The broth is prepared by heating sirloin butts in water. Purchased canned carrots and tomatoes are used

The prepared raw material and the canned ingredients are heated in an atmosphere of water vapor in closed glass lined Pfaunder kettles. After a definite cooking period the material is flowed into a monel metal straining apparatus or pulper, which is flooded with steam to exclude air. The pulped mass is pumped into a glass lined storage kettle, from which it falls by gravity to a filling machine, where it is filled into washed

glass jars, which are sealed and are processed at a temperature of 116 C. for about one hour

Analysis (submitted by manufacturer) —	per cent
Moisture	88.6
Total solids	11.4
Ash	1.4
Salt (NaCl)	0.5
Fat (ether extract)	0.1
Protein (N × 6.25)	1.1
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	8.6

**Calories**—0.4 per gram 11 per ounce.

**Vitamins**—The method of preparation efficiently protects the natural vitamin values

**Claims of Manufacturer**—For all table uses but especially intended for infants, children and convalescents and for special diets. Only warming is required for serving. The natural mineral and vitamin values are retained in high degree.

**PARADISE SODA CRACKERS (SALTED)**

**Manufacturer**—Paul Schulze Biscuit Company, Chicago

**Description**—Soda crackers prepared from flour, lard, malt extract, salt, baking soda, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

**Manufacture**—The sponge dough containing flour, water, lard, yeast and a yeast food is fermented for nineteen hours at 26 C., flour, malt extract, salt, water and soda are added to make a stiff dough, which is again fermented rolled into sheets, partially cut into crackers, sprinkled with salt and baked on oven shelves at 232-260 C. for four minutes. The sheets are broken into crackers, cooled and packed in wafer paper inserts in cartons

Analysis (submitted by manufacturer) —	per cent
Moisture	6.0
Ash	4.1
Salt (NaCl)	3.7
Fat (official method I for bread)	10.3
Protein (N × 6.25)	10.1
Reducing sugars as dextrose	0.3
Sucrose (copper reduction method)	0.2
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	69.2

**Calories**—4.1 per gram 116 per ounce

**CREAM OF RICE**

(WITH SMALL PERCENTAGE OF POWDERED SKIM MILK)

**Manufacturer**—Cream of Rice Corporation, New York

**Description**—Mixture of granulated polished rice with a small percentage of powdered skim milk.

**Manufacture**—Polished Louisiana rice and broken rice are ground, bolted and aspirated to remove flour. Rice of desired granulation is heated to destroy any possible insect infestation, mixed with a small percentage of skim milk powder and automatically packed in cartons

Analysis (submitted by manufacturer) —	per cent
Moisture	9.8
Ash	1.0
Fat (ether extract)	0.8
Protein (N × 6.25)	8.6
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	79.4

**Calories**—3.6 per gram 102 per ounce.

**Claims of Manufacturer**—A quickly digested "smooth" cereal practically free from any indigestible roughage.

**LARABEE'S AIRY FAIRY SOFT WHEAT  
PATENT FLOUR (BLEACHED  
AND MATURED)  
AIRY FAIRY CAKE FLOUR (BLEACHED  
AND MATURED)**

**Manufacturer**—Larabee Flour Mills Company, of the Commander Larabee Corporation, Minneapolis

**Description**—A soft winter wheat "short patent" flour, bleached and matured respectively with a mixture of benzoyl peroxide with calcium phosphate (one-half ounce per barrel) and chlorine (three-fourths ounce per barrel)

**Manufacture**—See procedure described in THE JOURNAL, June 18, 1932, page 2210

**Claims of Manufacturer**—For cake, biscuit, and pastry baking

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY JUNE 24, 1933

## THE MILWAUKEE SESSION

The annual session of the American Medical Association just held in Milwaukee aroused most favorable comment because of the exceeding smoothness of organization by the local committee in the handling of the convention affairs. Event succeeded event exactly on schedule without apparent extraordinary activity and to the immense satisfaction of every one who participated. Moreover, the hospitality of local physicians seemed to reach every convention visitor.

If the majority of visitors were asked to name the most striking feature of the convention they no doubt would choose the Scientific Exhibit. By a felicitous arrangement, the individual exhibits were for the most part correlated with the papers read in the various sections, except for special exhibits by various departments of the Association and others particularly planned by the Committee on Scientific Exhibit. Because of the practical and timely character of the exhibits shown, many of the exhibit spaces were crowded with visitors throughout the day. The Scientific Exhibit apparently constitutes one of the best types of direct graduate education available. Particularly interesting is the fact that several of the state societies are planning a similar arrangement on a smaller scale for the coming year, an evidence of the appreciation of this work by those who saw the exhibit function.

The opening meeting and the President's reception were delightfully arranged and attracted capacity audiences. The Woman's Auxiliary of the State Medical Society of Wisconsin and particularly of the Medical Society of Milwaukee County developed a program of entertainment which again met with numerous commendations. Almost a thousand women registered with the Auxiliary and there were perhaps an additional thousand who enjoyed the meetings, teas, luncheons and dinners without formally registering.

At the meetings of the House of Delegates, almost 160 delegates were in attendance. Topics of major interest to the medical profession that were discussed included the economics of medical service, changes in the nature of medical education, the certification of

specialists and the routine work of the American Medical Association. In its executive session the House of Delegates tabled a resolution of the Committee for the Investigation of Birth Control and unanimously adopted a resolution against the persecution of any human being because of race or religion.

Exhibitors in the technical exhibits were also warm in their approval of the usefulness of this annual session, many of them expressing delight in what seemed to be a turn upward in general business conditions as reflected by numerous orders for books, medical preparations and apparatus. The total registration, over 4 600, afforded opportunity to exhibitors to meet considerable numbers of physicians and to give them at first hand insight into some of the newer methods and technics available in medical practice.

A final word must be said relative to the remarkable performance of the weather man responsible for conditions in the state of Wisconsin. Just before the opening of the annual session he blasted the Middle West with a heat wave that will still be recalled by the oldest inhabitants a century hence. As the visitors and Delegates began to arrive he suddenly relented and during the entire period of the annual session moderate temperatures and salubrious breezes prevailed. The foliage in the gardens of Wisconsin blossomed profusely, cooling beverages were available in abundance, and as the editor of the society notes in the country newspapers are wont to say, a pleasant time was had by all.

## CERVICOVAGINITIS OF GONOCOCCIC ORIGIN IN CHILDREN

Vaginitis in young girls is a medical, social, sanitary and economic problem. It is a constant source of concern in the care of female infants and children and of young women, in home and school, in camp and orphan asylum, in day nursery, hospital, college, swimming pool, office and places of business. Little research or centralization of information on the subject has been done. As a detached problem, the control of vaginitis has engaged the attention of the general practitioner, the pediatrician, the gynecologist and the bacteriologist.

Brunet and others<sup>1</sup> have studied the disease from clinical, bacteriologic and sociological points of view in a series of 332 young children referred because of vaginitis of supposed gonococcal origin. Two hundred and forty-one children were studied with relative completeness, including 175 in whom vaginal endoscopic examination was made. Most of the cases were in young children. The ages ranged from infants under a year to girls of 13 or 14, but a fourth of them were 2 years or younger, more than half were under 6 and only one child in eight was older than 9. On admission, 192, or 79 per cent, of the 241 patients were judged to have

1. Brunet W. M. Tolle, Dora M. Scudder, Sara A. and Medcalf, Anne R. Cervicovaginitis of Gonococcal Origin in Children. Report of a Project of the Bellevue Yorkville Health Demonstration of New York City. *supp 1 Hosp. Soc. Service Mag* 1933.

positive clinical gonococcal infection, 33, or 14 per cent, were grouped as suggestive, while 16, or 7 per cent, were considered normal clinically. In all, 233 cases, or 97 per cent, were judged to be positive or suggestive either by clinical observations or laboratory tests. Clinical and laboratory reports corresponded to a high degree, 85 out of 100 cases agreeing.

In this series, it was found difficult to trace the source of infection. The potential source of infection was ascertained in 113 of the 212 clinical cases considered in detail. In 104 cases, evidence of gonorrhea was found on examination in one or more members of the family. Of the seventy-six mothers examined, forty-six, or 60 per cent presented clinical and bacteriologic evidence of gonorrhea, the remaining mothers showed evidence of chronic leukorrhea. Only twelve of the fathers were examined, but of these nine were infected. While infection from contaminated articles such as towels, toilets and bathtubs, is by no means impossible, the majority of the cases studied resulted from close intimate personal contact within the home. Gonococcal cervicovaginitis in the children of this series was infrequently the result of sexual contact.

Cervicovaginitis in children does not differ widely from a similar infection in adults. Its course resembles that in adults. Smarting and frequent urination started in from three to eight days after infection, with a subacute or chronic stage soon developing. The difference from the adult picture lies in the rarity of inflammation of the vulvovaginal glands, the urethra, and the fallopian tubes and peritoneum. In only four cases of the series did pelvic involvement occur, and eye infection in but two, only one of which was gonococcal. Rectal involvement was rare, and arthritis was not observed.

Examination of the cervix, however, showed it to be infected in about four fifths of the cases. The clinical appearances in the positive cases ranged from a slight redness of the cervix to the large soft edematous type which bleeds easily when swabbed. Several patients had ectropion of the mucous membrane and a large number had a granular condition about the external os. No high degree of erosions was seen. There was a strong tendency to persistence of the inflammation.

Careful bacteriologic studies were made in 322 cases of the series. Of this number, only three cases showed gram-negative diplococci other than gonococci. However, the demonstration of typical biscuit shaped gram-negative diplococci in stained films of secretions from the genito-urinary tract gave only presumptive evidence of gonococcal infection. Cultures were found to be the most important method of checking up on cases of cervicovaginitis. Newly infected cases ran a typical course and gave positive smears and cultures for from eight to fourteen weeks. Cultures were of little value in the diagnosis of some of the chronic treated cases, but often unexpected results were obtained from cases that appeared clinically negative. Pathogenic organisms

such as streptococci were isolated from the genito-urinary secretions in some cases. Other organisms found occasionally were gram-negative bacilli, sarcinae, and Döderlein's bacilli. No true diphtheria bacilli were found. The application of fresh animal serum at the site of a probable gonococcal infection, namely, the cervix and urethra—as suggested by Pribram and Jonas<sup>2</sup> in 1928, was found to be a valuable aid as a provocative in the diagnosis of the early chronic cases in which cultures had become negative.

Treatment in this series did not abort the disease. Its course, as compared with eighty-four controls which had mere external genital cleaning, was somewhat shortened by instillation of mercurochrome in 2 per cent aqueous solution applied daily at home and by mercurochrome in gelatin applied through an endoscope at the clinic. Vaccines did not shorten the course in fifteen cases. The results seem to indicate that gonococcal cervicovaginitis in young girls is a self-limited infection and usually fades out within a few months.

This study shows the need of further diagnostic tests to differentiate in the last stages, the gonococcal from the nongonococcal forms of vaginitis, and also tests to detect latent uncured cases which may be the unrecognized carriers of gonococcal infection, and, lastly, tests for proof of cure. In brief, the study consequently should serve as an incentive to further work on vaginitis of children with a view to the development of better methods of prevention and treatment.

#### AN IMMUNOGENIC PARADOX

Investigations currently reported by Dr L. T. Webster<sup>1</sup> from the Rockefeller Institute indicate that selective breeding of animals resistant to one microbic disease may inadvertently produce animals hypersusceptible to other infections. The geneticists have pointed out many examples of similar "linkage" between hereditary functions. They would merely assume that hereditary microbic resistance involves a multiplicity of unit factors carried by different chromosomes. The observations have, however, immediate practical interest in their bearing on problems of animal husbandry.

Webster's studies were made on mice reared and maintained for nearly two decades under the most scrupulous hygienic conditions. During this time the herds of mice had never been exposed to microbic infections. The most painstaking examinations had failed to reveal "carrier" conditions. On routine exposure of these herds to standard doses of mouse typhoid bacillus, the mice showed on an average 37.4 per cent herd mortality. The general mouse population, therefore, was 37.4 per cent susceptible to *B. enteritidis* when tested with standard doses and under standard dietary and climatic conditions. By

<sup>2</sup> Pribram, Ernst, and Jonas, E. *Proc. Soc. Exper. Biol. & Med.* 55: 627 (May) 1928.

<sup>1</sup> Webster, L. T. *J. Exper. Med.* 57: 793-819 (May) 1933.

selective breeding this population was segregated into two immunologically distinct mouse strains. The first, or susceptible, strain showed an 85 per cent herd mortality. The second, or resistant, strain showed but a 15 per cent *B. enteritidis* mortality. By twelve generations of brother-sister inbreeding even higher hypersusceptibles were produced, one inbred strain showing an 89 per cent and another a 97 per cent *B. enteritidis* susceptibility.

By hybridization of the susceptible and resistant mouse strains, Dr Webster found that the hereditary microbic resistance is not "sex linked" and tends to be transferred as a "dominant" genetic character. Thus 89 per cent susceptible males or females crossed with 15 per cent susceptibles gave progenies showing a 17.7 per cent susceptibility. Back-crossed with susceptibles, Dr Webster obtained a second generation progeny showing a 61.2 per cent herd susceptible. Back-crossed with resistants, the second generation susceptibility was 34.2 per cent. A comparison of all herds with respect to sex ratios, relative fertility and body weight showed that the hereditary *B. enteritidis* resistance is not appreciably correlated with bodily vigor. From this one might conclude that selective breeding of domestic animals for bodily vigor alone would not necessarily produce immunologically superior herds.

In order to throw light on the mechanism of this hereditary microbic resistance, comparison was made of the relative importance of hereditary portal defenses and inherited internal tissue resistance. This comparison showed that the resistant herds not only have more perfect superficial mechanical defenses to microbic invasion through the gastro-intestinal mucosa but that their internal tissues are also more resistant to direct subcutaneous, intraperitoneal and intravenous injection. These mice were also relatively resistant to nasal or pulmonary invasion by certain other infectious agents, such as *Pasteurella avicida*, Friedländer's bacillus and the pneumococcus. This resistance, however, was shown only when these agents were given intranasally

and not when injected directly into internal tissues. Dr Webster's paradox arises from his observation that hereditary resistance to *B. enteritidis* is apparently "linked" with hereditary hypersusceptibility to louping-ill virus.

## Current Comment

### WALTER L. BIERRING, PRESIDENT-ELECT

The election of Walter L. Bierring to the presidency of the American Medical Association comes to him as the culmination of a career of significance in medical organization. He has been awarded the presidency of the Iowa State Board of Health and the Iowa State Board of Medical Examiners (1914-1922), presidency of the National Board of Medical Examiners, presidency of his county and state medical societies, presidency of Alpha Omega Alpha, honorary medical fraternity, and a regency in the American College of Physicians. Dr Bierring was born in Davenport, Iowa, July 15, 1868, of Danish parentage, indeed, of the family which explored the northwest passage and the Bering Sea. He was educated in the schools of Davenport. He attended the State University of Iowa, in both arts and medicine, receiving his M.D. degree in 1892. His postgraduate study abroad included pathology and bacteriology in Heidelberg in 1892, in Vienna in 1892-1893, and in the Pasteur Institute of Paris in 1894. After his return from abroad he became professor of pathology and



WALTER L. BIERRING, M.D.  
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

bacteriology, and later of the theory and practice of medicine in the Iowa State University College of Medicine (1893-1910). From 1910 to 1914 he was professor of theory and practice of medicine in Drake University College of Medicine. From the earliest days of his career in medicine, Dr Bierring has been particularly interested in problems of medical education. He has served for some years as secretary-editor of the American Federation of State Examining Boards and was also a member of the Commission on Medical Education. He is well known as an internist. His practice has included the position of attending physician at the

Iowa Methodist, Iowa Lutheran and Mercy hospitals. In 1921 he was made an honorary member of the Royal College of Physicians of Edinburgh in recognition of his services in connection with medical licensure and reciprocity between Great Britain and the United States. Recently he was appointed state health commissioner of Iowa, which position he will assume, July 1. His contributions to medical literature have included articles particularly concerned with the heart and the circulation. He was secretary of the Section on Pathology and Physiology of the American Medical Association in 1905-1906 and chairman in 1907. He served also as chairman of the Section on Practice of Medicine in 1919. Dr. Bierring was a member of the House of Delegates, representing the Iowa State Medical Society, in 1904, 1905 and 1906, in 1910 and 1911 he was a member of the House as a delegate from the Section on Pathology and Physiology, and in 1922, 1923, 1924 and 1925 as a delegate from the Section on Practice of Medicine. In presenting Dr. Bierring to the House of Delegates, the delegates from Iowa called attention to the service which Dr. Bierring has rendered as a practitioner of medicine in contact with the people. In all his activities Dr. Bierring has recognized constantly the position of leadership which the American Medical Association must occupy as the only democratic representative of the medical profession in this country.

#### MATURATION HYPERSUSCEPTIBILITY

Recently THE JOURNAL commented on the spontaneous "serologic ripening" presumed to occur in growing children. It may be that this does not always function to their specific advantage, taking for instance the form of a "maturation hypersusceptibility" in place of the expected "maturation panimmunity." This possibility is suggested by Dr. E. L. Burky's<sup>1</sup> studies of the normal maturation cycle, made on rabbits, with staphylococcus filtrates as the test antigens. The selected filtrates were highly toxic for normal adult rabbits, intravenous injection of 0.25 cc per kilogram of body weight usually causing death within twenty-four hours. When these filtrates were injected intravenously into young rabbits, however, no symptoms were observed, even when the dose was increased to 2 cc per kilogram of body weight. This dose is at least eight times the usual adult minimum lethal dose. This toxin insusceptibility of young rabbits continues till about the fourth month, when the normal adult susceptibility begins to be demonstrable. One easily studied feature of this susceptibility is the parallel development of cutaneous allergy. Intracutaneous tests with highly toxic staphylococcus filtrates invariably give negative reactions in young rabbits until the approach of the fourth month. After this the local skin reactions are positive, as in the adult. Since the serum of nonreactive young rabbits will not passively immunize or "desensitize" adult rabbits to staphylococcus filtrates, Dr. Burky concludes that the nonreactivity of young rabbits is not due to an immunity in the ordinary sense. He postulates a "lack of a reacting mechanism at birth." This theory of an inherent

immunochemical deficiency is not original with Burky. It was suggested at least two years ago by Kobak and Pilot<sup>2</sup> of the University of Illinois, to explain a similar nonreactivity in infants. They found that, while about 95 per cent of all human mothers are skin reactive to *Staphylococcus aureus* vaccines, less than 2 per cent of their children under 2 months of age are reactive. The proportion increases to about 10 per cent by the fourth month and to 25 per cent by the eighth month, and approaches 70 per cent by the end of the first year. Whether or not this maturation cycle in infants and young rabbits is due to spontaneous physiologic changes or to environmental influences has not yet been tested. The work, however, is of basic interest, since it suggests the possibility of new interpretations of adult cutaneous sensitivity to numerous other toxic or infectious agents.

#### GROWTH VERSUS LONGEVITY

Modern nutrition is based on the intuitive belief that diets which produce optimal growth in young animals will also produce optimal health and prolong life. McCoy<sup>1</sup> of Cornell University, however, holds that longevity and acceleration of growth are incompatible. Though not applying his conclusion to human medicine, he has no hesitation in applying it to veterinary science. Thus he writes that "the nutrition of animals that are to be slaughtered for meat shortly after they mature should be considered from the point of view of rapid growth. The same philosophy, [however, does not apply] to the rearing of dairy calves and horses [in which] it is desirable to have a long productive life span." The possibility of a physiologic incompatibility between accelerated growth and longevity was suggested more than fifteen years ago by Osborne and Mendel<sup>2</sup> on the basis of nutritional data from rats. This suggestion was afterward confirmed by other investigators, using data obtained from nutritional studies with insects and brook trout. McCoy, however, draws his present conclusion from much more dramatic data, namely, a comparison of the average life span of modern laboratory-fed rats, with longevity records, twenty years ago, before rats had the benefit of modern research on vitamins. Twenty years ago, rats fed on the crude mixed diets of that period were reported to be of slow growth, many of them not reaching full adult size till the end of one year. Certain recorded groups of that time, maturing slowly, showed an average life span of more than three and one-half years. McCoy's rats of today, fed modern diets for accelerating nutrition, reach full adult size before the end of the first six months and live on an average for less than eighteen months. Slow growth and a short life span may result from certain dietary deficiencies. "No one has ever found it possible, however, [to devise a diet that will give] both rapid growth with early attainment of maturity and longevity." Whether or not this end could be obtained by two diets, a forcing diet during the growth period followed by more conservative nutrition during adult stages, has not yet been reported.

<sup>2</sup> Kobak, O. J. and Pilot, Isadore. *Proc. Soc. Exper. Biol. & Med.* 28: 584 (March) 1931.

<sup>1</sup> McCoy, C. M. *Science* 77: 410 (April 28) 1933.

<sup>2</sup> Osborne and Mendel. *Science* 45: 294 1917.

# PROCEEDINGS OF THE MILWAUKEE SESSION

## MINUTES OF THE EIGHTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT MILWAUKEE, JUNE 12-16, 1933

### HOUSE OF DELEGATES

#### *First Meeting—Monday Morning, June 12*

The House of Delegates convened in the Grand Ball Room of the Schroeder Hotel and was called to order at 10 a. m. by the Speaker, Dr. F. C. Warnshuis.

#### **Preliminary Report of the Reference Committee on Credentials**

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. D. Brook, Michigan, who reported that over one hundred delegates with proper credentials had registered and commended the promptness of the delegates in registering.

The Speaker, not hearing any objections, declared that the list of delegates in the hands of the Reference Committee on Credentials would constitute the roll of the House for the first meeting.

#### **Adoption of Minutes of New Orleans Session**

The Secretary stated that the minutes of the New Orleans session of the Association had been printed and put into the hands of all members of the House of Delegates and that no corrections or amendments had been received. No objections being heard on the floor of the House, the minutes were adopted as printed, on motion of Dr. Charles E. Humiston, Illinois, seconded by Dr. Arthur J. Bedell, New York, and carried.

Owing to the death of Dr. Albert E. Bulson, Vice Speaker, the Speaker appointed the Secretary, Dr. Olin West, to act in this capacity temporarily.

The Vice Speaker, Dr. Olin West, took the chair while the Speaker read his address, which was referred to the Reference Committee on Reports of Officers.

#### **Address of the Speaker, Dr. F. C. Warnshuis**

##### *Members of the House of Delegates*

The thoughts and hopes of the medical profession of this nation are centered this week in this House of Delegates. Every county and state medical organization appeals earnestly and hopes trustfully that your deliberations and enactments will formulate policies and procedures that will be helpful in their attaining solutions of the local and individual problems that confront them. Every delegate should deeply sense his obligations and clearly recognize the magnitude of the trust that is reposed in him as a member of this House that must determine the policies of the Association. That responsibility is greater today than during former sessions.

This House is confronted by conditions created by epochal events in our national life. They may necessitate revision of attitude and intensified activity with increased alertness as to how best to enhance the vital interests of the public and the profession.

There is need for keen appraising judgment. The greatest acumen must be subordinated in order that your final acts will well meet up to the demands of the times and continue to maintain the present high standards, functions and leadership of the Association. Emotionalism must not supplant judgment. The needs of the hour must not warp our vision or duty to the future. Your Speaker is confident that you will respond to the need of the times by recording action that will reflect mature deliberation characterized by constructive, guiding enactments.

It is desirable and essential that you secure every fact and obtain all possible information before final opinions are expressed. To assist you in securing facts and accurate information there will be available to reference committees and delegates the Trustees and executives of the councils and bureaus of the Association and members of the headquarters personnel.

Our Association's activities have many ramifications. They intermesh in many of the Association's functions. They are all interrelated and interdependent. Consideration should be given to this fact before final action is taken on any question or when new programs are initiated.

Your Speaker has been advised to emphasize this caution during this session, which is confronted with extraordinary problems. Reference committees are advised to secure detailed information concerning Association affairs when they construct committee recommendations. Delegates likewise would do well to confer with these sources of information before sponsoring a specific resolution or a motion dealing with Association policies. Remember that however commendable your zeal may be and however soundly your arguments are constructed and applied to your own state, they may be of little value or aid when viewed in the light of what is or what will be most beneficial and applicable to a community, a state or the nation. It would be prudent to reflect that local problems are best met by local action. As a rule, they are not amenable to national enactments.

Delegates who for the first time are representing their state organization are assured that active participation in the deliberations of this body is a duty that they owe to the profession they represent. Every officer and member of this House will deem it a privilege to be of helpful assistance to you.

It has been gratifying to observe the manner in which a goodly number of state delegations reported, in extended detail, the proceedings of the last annual session to their state organization. Every state delegation should adopt this policy. The members in your state should be thoroughly enlightened in regard to the actions and functions of their national association. Characterize your service as a delegate by submitting a complete report to those whom you represent.

#### **COMMITTEES**

Appointments to Reference Committees have been made to give nation-wide representation on a Fellowship basis. It is recommended that delegates attend and participate in committee discussions. By doing so you will expedite the work of this House.

Your Speaker refrains from advancing specific recommendations. I do, however, renew my expressions of deep appreciation for the honor of serving as your presiding officer. To do so with every consideration for the rights of every delegate will be my steadfast purpose. I am sincerely grateful for the trust reposed in me.

#### **DEATHS**

And now, conforming to your instruction, it becomes my duty to call on you to pause to pay tribute to the memory of those who were of us but now are no more.

They are gone from the mountain.  
They are lost to the forest.

In this hour of memory and tribute, I officially report the death of L. E. Broughton, Alabama, F. C. E. Mattison, California, J. S. Helms, Florida, Albert E. Bulson, Indiana, J. W. Van Derslice, Illinois, T. O. Freeman, Illinois, J. A. Card, New York, E. C. S. Tahaferro, Virginia, Frank Billings, Illinois, W. S. Thayer, Maryland, and A. R. Mitchell, Nebraska. These departed Fellows kept the faith and upheld

the honored traditions of their profession 'The now sacred memories that each bequeathed to us formulate our lasting tribute

Wherefore for us when real men die shall be no mournful graveyard glance Our souls with theirs invade the sky and to immortal strifes advance. For great is our inheritance when real men die

That inheritance to us is the memory of friendship endeared by their contributions for the joy happiness and fulness of all life for their fellow man 'Their sun of life has set as sets the morning star, which goes not down behind the darkened west but fades away in the glorious light of Heaven!'

They shall not be forgotten men!

This House will now stand in momentary silence to pay respect to all honorable members of the profession who have gone during the past year

#### Reference Committees

The Speaker resumed the chair and appointed the following reference committees

#### SECTIONS AND SECTION WORK

Isaac A. Abt, Chairman	Section on Pediatrics
J. W. Amesse	Colorado
E. F. Cody	Massachusetts
R. W. Fouts	Nebraska
J. N. Hunsberger	Pennsylvania

#### RULES AND ORDER OF BUSINESS

J. F. Hagerty, Chairman	New Jersey
D. E. Sullivan	New Hampshire
Horace J. Brown	Nevada
H. A. Gamble	Mississippi
M. L. Stevens	North Carolina

#### MEDICAL EDUCATION

Irvin Abell, Chairman	Kentucky
E. D. Plass	Iowa
W. H. Ross	New York
S. P. Mengel	Pennsylvania
Mather Pfeifferberger	Illinois

#### LEGISLATION AND PUBLIC RELATIONS

C. E. Mongan, Chairman	Massachusetts
C. J. Whalen	Illinois
E. M. Pallette	California
Wells Teachnor, Sr	Ohio
A. A. Ross	Texas

#### HYGIENE AND PUBLIC HEALTH

W. F. Draper, Chairman	Virginia
J. C. Taylor	Wisconsin
G. C. Madill	New York
J. N. Henry	Pennsylvania
W. A. Cook	Oklahoma

#### AMENDMENTS TO CONSTITUTION AND BY LAWS

Holman Taylor, Chairman	Texas
Ben R. McClellan	Ohio
J. R. Bloss	W. Virginia
E. L. Skidmore	Utah
J. M. Birnie	Massachusetts

#### REPORTS OF OFFICERS

F. S. Crockett, Chairman	Indiana
C. T. Pigot	Montana
J. H. O'Shea	Washington
J. N. Vander Veer	New York
E. A. Hines	S. Carolina

#### REPORTS OF BOARD OF TRUSTEES AND SECRETARY

N. B. Van Effen, Chairman	New York
W. R. Molony	California
W. D. Chapman	Illinois
W. F. Braasch	Minnesota
H. H. Shoulders	Tennessee

#### CREDENTIALS

J. D. Brook, Chairman	Michigan
D. A. Rhinehart	Arkansas
W. H. Myers	Georgia
C. R. Scott	Idaho
H. A. Miller	New Mexico

#### MISCELLANEOUS BUSINESS

H. M. Johnson, Chairman	Minnesota
George Blumer	Connecticut
J. F. Hasig	Kansas
B. L. Bryant	Maine
A. R. McComas	Missouri

#### MEDICAL ECONOMICS

The Speaker, on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. C. S. Gorshine, Michigan, authorizing him to do so, appointed the following reference committee on Medical Economics

A. J. Bedell, Chairman	New York
W. F. Donaldson	Pennsylvania
C. W. Waggoner	Ohio
Dudley Smith	California
Jabez N. Jackson	Missouri

#### Address of President Edward H. Cary

The Speaker, in presenting the President, Dr. Edward H. Cary, Dallas, Texas, said

It is a high honor to be President of our Association. In turn our Association is honored by its President. Few delegates realize and very few Fellows appreciate the tremendous contribution that is made to our Association by our Presidents.

We have been passing through troublesome times. Even after event has presented itself demanding action in order that our Association's interests be conserved, our policies sustained and our future enhanced. We have indeed been fortunate in having as our President one who was peculiarly fitted and exceptionally capable to meet the exceeding heavy demands that devolved upon him. Dr. Cary has responded in a most commendable manner. He has made a contribution that I do not believe has ever been equaled by a President of this Association. During his term of office he has traveled 99,190 miles on official business. He has been away from his home over 340 days almost an entire year, in keeping 80 engagements in which he was the Association's official representative—a wonderful record of faithful service.

It is my privilege and pleasure to present to you one who has served so well your President, Dr. E. H. Cary.

Dr. Cary thereupon delivered the following address which was referred to the Reference Committee on Reports of Officers.

#### *Mr. Speaker and Members of the House of Delegates*

I come to you today with sincere appreciation of the opportunity which you have given me to serve the medical profession of this country and possibly the people. Unfortunately, conflicting engagements prevented me from accepting some of your invitations, but I have traveled widely and spoken numerous times, striving always to be worthy of your high trust. From these contacts on many happy and auspicious occasions I have gained inspirations, friendships and delightful memories, which I shall always treasure.

Concurrently with my occupation of this august office has occurred the worst period of this era of depression. There has been great restlessness among the members of our profession, some of whom were ready to adopt new methods of practice or become attached to untried schemes which might offer quick monetary returns. Only the force of medical opinion, grounded in ethical traditions and reaffirmed here and there, could steady this distressed doctor until the economic situation changed or until reasonable adjustments could be projected and presented for discussion. Fortunately the tide has turned, and there is time for due consideration of the future economic and ethical relations of the profession to the public.

Your official family, whether its members are devoting all or part of their time to the business of our organization, have faithfully attempted to interpret the demands of the hour and have cooperated to sustain the high purposes for which the American Medical Association came into being. Contacts of very wide scope have been made. Old ties have been reinforced so that the policies of the organization have won favor and been generally adopted.

May I call your attention to a few of the outstanding policies carried to a successful issue.

First, the contention of our profession that the American physician should have the right to use his own judgment in prescribing alcoholic liquors. This principle has been accepted by Congress and a law passed which seems desirable to the members of our profession who have been interested in destroying restrictive legislation. The question of prescribing whisky for therapeutic purposes is placed on a basis on which medical men are to be trusted and, to maintain the high standards and dignity of our profession, they cannot be other than worthy of this trust.

Second, the contention of the profession that a federal law which affects the practice of medicine is undesirable when it is directed by a bureau under lay control from the seat of the national government, for example, the Sheppard-Towner Act. All activities of this character regardless of their humanitarian purposes, should be the result of the combined influence of the profession and interested citizens who advocate such services in their own states. The sentiment can be developed and the purposes of such measures made more effective if they have gained

the support of the profession without enlarging the possibility of national paternalistic legislation. We believe, that through the state public health service and the intelligent use of their responsibility the people will support such activities which are needed to meet the demands for a better care of the mothers and babies of the many commonwealths.

Third, we recognize that the narcotic question is international in aspect and will require further international agreement before it can be controlled. Narcotic legislation has received most careful consideration, and an enlightened policy has been followed. The Uniform States Narcotic Act had its origin from the work of one of your committees, created in 1919. Of course, much work has been done in conferences with other groups. Some of the states have already passed the act, and no doubt others will rapidly follow. It has been found that the federal law, however valuable, fails to meet effectively the local situation.

Fourth, your legislative committee has labored earnestly to meet the issue raised by the ever growing service to the veterans which is the result of legislation in their interest. The question of hospitalization has been a serious one and, though there has been no desire to prevent the most liberal care on the part of the government for the service-connected disabilities due to the war, we have strenuously objected to the liberalization of laws which permit the man who is able to pay for medical service to enter veterans' hospitals for free medical care. We have objected to more hospitals being built unless they are needed to care for those suffering with tuberculosis or with mental and nervous disorders, or unless they are needed as old soldiers' homes.

Your President with Dr. Woodward appeared before the joint committee of the Senate and House. The opportunity was accorded us to present what we believed to be your point of view on this question. The committee manifested an increasing interest in our presentation. Many questions were asked and we both felt that the committee agreed in the main to the principles we supported. Undoubtedly, a widespread sentiment has been developed in Congress that our government has gone far enough in its hospitalization program. We believe that the status of this question is in harmony with your views. Since the advent of the new administration, we have been told that no more hospitals are to be built even though the money has been appropriated, that some of the hospitals already built are to be closed, and that hospitals in process of construction and considered desirable will be finished and used. We were informed that the beds occupied by non-service-disabled veterans will be gradually assigned to those who are suffering with tuberculosis or nervous and mental diseases, while some of the hospitals are to be altered so that they can be used more and more for domiciliary care.

Following the adoption of the economy program of the President as to veterans' gratuities, an order was issued to the medical officers of the veterans' hospitals by General Hines, humane in tenor, stating that only those who were well or those who could be properly discharged from the hospitals be sent home. This order has resulted in about fifteen thousand patients being dismissed up to June 3, 1933. This is reflected in the cancellation of certain contracts with the army and the navy and in the reduction of personnel, physicians, nurses and other help in many of the hospitals which remain open. There has been an effort made to reduce the occupancy of all beds heretofore used by the non-service-connected disabled soldier and, when this point has been reached, then the future use of the beds will come from a very numerous group of service-connected cases, many of which are now being cared for at home. In other words, the department intends to keep the present beds, totaling 41,000, in veterans' hospitals in service. The rebellion of the Senate and House, forcing a compromise may reopen many phases of the question.

We must not lose sight of the fact that the present program is also the result of a depleted treasury and, if the economic situation of the country should improve before the present policy is well established the demands of the veterans having non-service-connected disabilities may reestablish abuses of governmental aid to which we have objected. Hence, it is necessary for members of our profession to continue their opposition, otherwise, we shall be confronted with the same situation as it

existed before Congress gave its support to the request of the courageous President of our country.

Fifth, the Report of the Committee on the Costs of Medical Care has stimulated the interest of the public and of the profession.

The Minority Report of this committee has been supported by the members of your official family and though both the Majority and Minority reports have been given wide circulation and thoroughly discussed, we feel that the great majority of the members of the medical profession throughout this country is supporting the Minority Report, both as to principles enunciated and as to the expediency of not determining a far-reaching policy affecting the medical profession at a time when the economic status of this country is abnormally low and likely to improve.

While cognizant of the demands made on the profession to readjust its methods and practices, we have protested that readjustments, if needed, should follow a full and complete discussion of all phases of the subject. We have believed that a solution can be found, through the cooperation of medical men who are deeply interested, that will not involve the destruction of fundamental values underlying medical practice. With this in view, the county medical societies have been encouraged to give serious study to the economic phases of the practice of medicine and to solve their problems, keeping in mind the fundamental principles underlying our ethical relations to one another and to the public.

We recognize the varying conditions and realize the impossibility of meeting this difficult situation with any one plan such as those that have been offered from various sources. Our organization is striving through its leaders at headquarters and elsewhere to serve the public and the profession of medicine, first by discussion of problems, secondly, by trial of suggested plans, thirdly, by searching for and finding the truth, and thus be able to crystallize the professional mind so that unity will prevail. We all recognize that until there is unity of spirit and professional desire among the members of the county medical societies which are units of our organization, no plan, however far reaching and humanitarian in its aspects, can hope to live without the cooperation of the majority of men practicing in that locality.

The desideratum to be ever kept in mind and preserved is the right of the patient to choose his physician. A free road or pathway should be kept open from physician to patient. Hospital budgeting plans should never include medical services. The two services should be kept separate and distinct.

#### THE RELATION OF THE PRIVATE PHYSICIAN TO THE HEALTH DEPARTMENT

On this subject of vital importance to the people and to the profession permit me to repeat a few comments I have made to public health men.

The relation of the private practitioner to the health department is sometimes made uncertain from the things he reads, the fundamental reason for his support may be there, but some one has raised, through statements or innuendo, doubt and fear as to the future of medicine. Organized medicine has come thus far because of its devotion to education used in its broadest sense. It has directed the forces which have made possible the educational enterprises which give to the service of the people, the highly trained medical men of our time. Organized medicine has at the same time, through its machinery given support, aid and comfort to campaigns which might advance the health forces of the nation. I think we can generally hold to the view that men who have charge of the health of the nation should have had the education and environment to make of public health servants experienced doctors.

An undergraduate medical school's function is to create doctors and not specialists, but I dare say every graduate of our class A medical schools has sufficient basic and general knowledge to acquire special knowledge readily by following that routine to which he is directed. This routine takes the graduate into practice with many experiences and to special places for intensive study, finally to be equipped to commence work in the chosen field, there to learn how to make useful his information gained through honest toil under happy circumstances.

We are deeply interested in the people having the benefit of all the knowledge necessary to protect them from disease, whether it be epidemic or among individuals in our immediate

care, and we agree, when a community is without the protection which comes from a well organized health program, that it is undoubtedly a mistake which may develop into a catastrophe.

Organized medicine as a whole is not willing to assume the errors of judgment or lack of medical leadership which prevails in any community where intelligent cooperative helpfulness toward public health is lacking, therefore organized medicine has a duty to perform.

Ferrell stated in an article in *THE JOURNAL*, May 6, that there are 967 cities in the United States with 10,000 inhabitants or over. Of these, 416 (43 per cent) employ full time health officers, of whom 265 (64 per cent) are physicians and 151 (36 per cent) are not. The 151 lay health officers are serving in twenty-five states. Forty-one of them are distributed in twenty-two states, and 110, or 73 per cent, are serving in the three states of Massachusetts, New Jersey and Pennsylvania. In these three states there are 220 cities of 10,000 inhabitants or over, of which 126 have full time health officers, of whom sixteen, or 13 per cent, are physicians, and 110, or 87 per cent, are not physicians. There are about 110 cities in the same states without full time health officers. He also states that there is a failure to provide medical leadership in health work in other states. We note that the nonmedical health officers are distributed in twenty-five states. There is evidently a lack of medical leadership in many where such a condition exists. It is of supreme importance that a clearer understanding of the responsibilities assumed by both the profession and the health officers should be so defined that organized medicine would more effectively support a program in which a complete agreement of an enlarged service of preventive and medical character would be made workable in the states which compose this great nation.

It would seem necessary to find a formula which would be readily accepted by those doctors who are engaged in private practice and by public health workers whereby the people would provide welfare budgets to compensate not only the health officer but the physician. These forces would then find a common ground in the support of a health department which contemplated the use of physicians who would more definitely render the needed service in an enlarged program of education in preventive and personal care of the health needs of the community.

It has often been said that the people have already been educated to believe in the efficiency of preventive measures, they subscribe to the theory that immunization is a demonstrable success. They know that epidemics can be modified or prevented through the activity of a well organized health department cooperating with a willing medical profession.

The leaders of three important forces are already educated to the value of applying the knowledge which is available for conserving the health of the people and controlling incidents of disease. These three forces are in a position to act, provided they are worthy of their responsibilities.

First, the public health officer whose knowledge and sincerity are known to the medical profession and the public. This would suggest that being a public health officer carries with it far more than political preferment, that he has won his place through education, adaptation and zeal, and a broad conception of human relations with a political prescience which, in itself, makes him unusual among his fellows. Necessarily, to gain the complete confidence of one of the vital forces, the members of the medical profession, it would be less difficult for the public health officer if his fundamental training is that of the physician.

The second force which can be found in every community is the broadly educated, far seeing medical practitioner, who believes firmly in the beneficent application of the applied sciences and subscribes to a doctrine which in itself, leads to a broader need of medical service from the practitioner. Without undue thought he realizes that the health, happiness and prosperity of the people of a community are a trinity of social significance on which future medical service may emanate and for which the medical man is repaid for his contribution to the common welfare. Service to living people extends to the grave. Longevity has its rewards in multiplied services needed from the medical profession. To serve people who suffer from disease and who are in despair offers emotional satisfaction to physicians for to help without thought of material reward has given deep gratification to members of a great profession whose thoughts are of others and not of themselves. How much wiser

and more beneficent, however, to combine our knowledge and influence to prevent disease and despair, finding elation from concerted action with an improved economic situation for all concerned.

The third force is enlightened public opinion. The people, ever optimistic and sometimes overcredulous, believe in the wonders of science. They have been so impressed with what has been accomplished in the prevention and cure of disease that they are impatiently seeking all the values to be had, anticipating the practical application of experiments before they are proved.

Among these three forces will be found the leaders who can be merged into a composite fighting battalion to mold their own kind into an effective unit for the common good. Leaders of each group must first stamp out suspicion and parallel high service with human needs not losing sight of the underlying economic situation, for lasting results depend on economic satisfaction.

The attitude of society should be directed to its own responsibilities. It should either correct the causes leading to dependence or assume its burdens as related to the sick so that this demand on the profession is cared for by society and not expected from the doctors. This should be accomplished through the use of the members of the county medical society and the local health agency. It is essential to cultivate public opinion to develop an adjusted budget by the various communities to meet their local health requirements.

Indigence should not be encouraged but should be recognized as a part of the social deficiencies which are to be met from a general fund rather than the present plan, which lacks the advantage of a definite responsibility. It is undoubtedly to the advantage of society as well as to the indigents to establish more concretely the forces that lead to the best remedial care. When attempting to construct a plan in one's own mind, which might aid in the solution of the difficulties which arise to separate these three groups, we must consider the strength of these forces, which through training and experience are to cooperate. Their respective influence on their associates and society is important. With this in mind, we evidently turn to the most logical group whose purposes and ideals definitely harmonize and whose machinery is best adapted to make it the one great power which can be used for the common good.

My friends, wherein does this power lie? Is it not in and through organized medicine? Has not the health and happiness of the people always been dear to the men who have made and who sustain the American Medical Association?

A great community interest encourages the individual doctor and sharpens the competition for him because the people are free to choose the men who can retain and best use the information acquired. This is made possible for all the people because of the activity and orderly force created and kept alive by organized medicine.

We believe that the conduct of the Association is well worthy of your approval, for it has not lost a significant point in policy or legislation in the last five years. Whatever success we have attained can be in large part attributed to the loyalty of the rank and file of intelligent men who keep abreast of the complexities of the day, whether the problem is scientific, social or legislative in character. These loyal men realize that the medical profession can consciously determine its own destiny, for, after all who can take the place of the medical men? We believe that we know how to educate and make useful the men in our profession. We realize that the restraint needed to curb the overambitious comes from within the profession. We know human nature. Medical practice has raised certain safeguards for the good of the practitioner and the patient.

In this connection, *THE JOURNAL* is the greatest means we have for distributing quickly information, without it we should be helpless in quickly mobilizing professional opinion. Although it is true there are many members of the American Medical Association who do not take *THE JOURNAL*—and let it be said here that they are appreciated members through their county medical societies—yet it must be clear that only through subscribing to the greatest medical periodical on earth do they become contributing members. No other journal of national interest in any other land can be had for the price paid for *THE JOURNAL*. A reduction in the subscription price, if only one dollar a year, would, the past year, have converted a net

gun of the Association into a probable loss, thereby curtailing many of the valuable activities of the organization. Our organization cannot safely retrench at this point, for *THE JOURNAL* is worth more than it costs in money and the money is needed and used in the interest of its members, after all, it was the income on our reserve some \$76,000, which has made it possible to proceed so confidently.

I am glad to state that your Board of Trustees will be able to report that during these trying times and in the face of the greatest period of expansion of the activities of our organization the economies established have made it possible to carry on efficiently without impairing the reserve fund which has been so consistently developed and which must be maintained.

We may congratulate ourselves on the appreciation the public has shown through its acceptance of *HYGIA*, which has been self supporting and will increase in circulation with improved business conditions.

Undoubtedly the control of newspaper publicity as to medical matters has been in the interest of the public and the means of eliminating much misinformation. It reflects credit of an unusual order on the talent and perspicacity of the editor of *THE JOURNAL*.

The Committee on Foods is developing contacts and generating influences which will be far reaching because the people of this country are becoming more and more interested in the endorsement of this committee which is given only when spurious claims are eliminated from the advertisements of manufacturers of foods.

Let us not forget the necessity for a new building, as soon as the times become propitious. Our new departments of Medical Economics the *Quarterly Cumulative Index Medicus* the Bureau of Exhibits the Committee on Foods are being developed and require larger space. The services of our library have met with tremendous demands from members of our organization. We can extend these services with increased space and personnel. We should look forward to the accumulation of a great library of books which now we do not have.

Your President has realized the necessity for delay and has not advocated the development of plans for the needed new building for it has seemed wiser to conserve our resources and not expand at this time of world-wide distress.

In a similar manner, addresses and communications from bureaus and councils should be given to the public, creating a better understanding of the purposes and desires of organized medicine to be of service to humanity.

We have gone far in this direction and have reached a high place in human relations, we cannot be static for fear of retrogression. With the loyalty and support of our membership we can go further.

Loyalty is essential throughout the organization. Our leaders should have unquestioned ability and at all times be able to express whole-heartedly the views which represent the will and crystallized opinion of the vast membership which composes this body.

Though scientific groups for special study may continue to exist within the organization they should not promote individual views on economic topics and policies divergent from those of the profession as a whole. These policies are formulated in this House and become the act of constituted authority, your honorable body speaks for the American Medical Association.

For this reason your Board of Trustees is composed of representative men who are and must be in sympathy with and interpret your wishes. They assume the responsibilities you have placed in their hands and wisely serve the entire membership of our organization, which is represented by this House of Delegates.

There will be many resolutions presented for your consideration. If the wisdom displayed in the previous sessions of the House prevails and there is no reason to doubt this, American medicine has nothing to fear.

Those states which have so wisely returned their delegates year after year protect medicine from the vagaries of the hour. Seasoned legislators are not created in a day, it has required patriotism and a very deep interest in things which concern the welfare of medicine to bring you annually to these meetings regardless of the meeting place and the distance you must travel for such occasions. To you and to your earnestness, I bend

my knee. I only wish that the medical men of this country could understand you as I do. You would have in many places a finer sense of obligation developed toward you.

While it is not necessary to remind you of the absent ones, I cannot forget that some of the staunch defenders of the faith are absent from this House. When I think of the elder statesmen who have been in this House so many years, I feel that I am treading on holy ground for I have had a personal loss in the passing of the great medical statesman Frank Billings, the faithful trustee A. R. Mitchell, the strong and responsive Vice Speaker and erudite Editor Albert E. Bulson, and the courageous and lovable J. W. Vanderslice, and others whom I did not have the pleasure of knowing so intimately. The older members of the House will, I am sure, feel the same sentiment. May we all emulate their nobility.

Again I wish to express my gratitude for your preferment. You have helped to create pictures of your friendliness and trust in my memory which I shall never forget, bringing pleasure and keen satisfaction in the opportunities I have had to serve you.

#### Address of President-Elect Dean Lewis

The Speaker, in presenting the President-Elect, Dr. Dean Lewis, Baltimore, said:

Your Speaker feels that the man you elected to succeed Dr. Cary as President at the close of this session possesses all the qualifications that that office exacts. He is an experienced, tried traveler; he is a bedside surgeon, intimately familiar with the practice problems of physicians. He is a student of economics and is endowed with keen discernment. He has our respect and confidence. We may safely rely on his sound leadership. Gentlemen, President-Elect Dean Lewis.

Dr. Lewis thereupon delivered the following address, which was referred to the Reference Committee on Reports of Officers.

#### Mr. Speaker and Members of the House of Delegates

Physicians have suffered acutely during the depression and have rendered their services freely without complaint. Apparently during periods of depression the morbidity and mortality are less than during periods of prosperity and inflation. I am told that insurance companies have known this for years and their statistics verify the foregoing statement. We are now apparently suffering the economic consequences of peace.

One of the main problems which had a decided effect on the profession was the extensive hospitalization program which the government embarked on immediately following the war. The legislation that was passed is of such recent date that it is not necessary to review it. Non-service connected disabilities entered largely into the program, so that finally almost 70 per cent of the cases that were hospitalized presented disabilities which had nothing to do with the service and did not even have a presumptive connection. Ochronosis, acidosis, gout and obesity were even on the list of diseases and were applied in the rating of disabilities. In the economy program that has been attempted non-service-connected disabilities were excluded. Recent happenings indicate that much pressure has been brought to bear and that hospitalization of non-service-connected disabilities may again be attempted. If the bars are let down there will gradually be an increase in the amount of hospitalization and a return to the conditions which existed before the attempt to economize was made.

There is no argument as to the responsibility of the government in the care of the service-connected disability, nor as to the responsibility of the government to the widows and orphans of those who were sacrificed in battle. But any man discharged from the army who is able to make his living has no lien on the government. This is generally admitted. It is much more difficult to rescind legislation than it is to prevent its passage. The medical profession must still make untiring and unceasing effort to prevent the hospitalization of non-service-connected disabilities. If such continues the foundation of medicine and the future of medicine are threatened. Hospitals already built for the care of the civilians in different parts of the country cannot carry the financial load long. I realize that not infrequently the medical profession has a bad press and that they are regarded as selfish. Any suggestions which they may make

are suspected of being based on some ulterior motive. The history and traditions of the profession refute such statements. Continued effort should be maintained to prevent a return to the system which prevailed before the economy act was considered. Personal contact with legislators is about the only method we have to prevent the continuation of a scheme which will bankrupt a government and if bankrupt, even the non-service-connected disability will have nothing. We will all be in the same boat, which is disabled and tossed about.

There may have been some injustices, but these could be corrected. It may be difficult for legislators to realize that it is frequently impossible for a physician to say that a disability was connected with service. This applies especially to a disease such as thrombo angitis obliterans, a number of cases of which are coming up for consideration. Whether these developed while the patient was in the service cannot be determined with certainty.

The different reports which have been made from time to time relating to medical care have been discussed so frequently that it is doubtful whether anything should be said about them. We all know that there are defects in medical practice. There are no systems of practice that are without fault. We have heard too much about the costs and about the distributions of the cost and not enough about the quality. Some of the criticism has come from those engaged in business who have promoted instalment buying and have encouraged people to assume obligations which are so great that those dispensing the necessities of life have had payments long deferred and, at times, no payment has been made at all.

The losses which hospitals have suffered led them to accept different schemes, which they will be glad to cast off when the depression is over. You will hear that it has been found after a careful survey that there are more than thirty schemes which have been proposed to provide for the periodic prepayment purchase of hospital care. Some of these schemes are revolutionary in character. They are proposed and backed by propagandists and promoters who are looking for a profit. Beware of the promoters who are robbed in the pure white of charity. No consideration is given to the relation between patient and physician. They have not confined their effort to the low income groups, and no attempt has been made to exclude from their scheme the final inclusive medical service with hospital care. In fact, in some of these schemes it is frankly stated that such is the ultimate aim.

It has been stated and no denial has been made that under any of the schemes which have been proposed to bring forth a medical Utopia suddenly that the mortality has not been decreased and the length of sojourn in the hospital has been doubled. The length of stay in the hospital is in marked contrast to the present system, in which an attempt is made to return the patient to life as soon as possible with as little disability as is compatible with his sickness or injury. Hospitalization for minor illnesses has increased and malingering has become a part of the system. It is natural for a man to get some return for his money, and he will seek under such a system hospitalization to secure some return from money invested.

It has been the history of all these movements that voluntary insurance is unsuccessful, and the compulsory insurance is finally adopted.

One of the founders of a foundation which gave financial support to Committee on the Costs of Medical Care has recently made the statement that voluntary insurance is not successful and that compulsory insurance should be put in effect as soon as possible and that this type of insurance should be placed for consideration before the federal authorities.

Judging by the performance of the business world during the past two years I should say that the medical profession has shown more ability to take care of its own business than any other profession. Physicians make mistakes but their practice has been on a high plane and will continue on this plane if cooperation is practiced instead of competition and if bidding for practice does not replace the system which has been in vogue since the beginning of practice.

Questionable practices regarding fees must be settled by the profession not by legislation but by developing a profession

which places service above financial gain and give to each patient a square deal. Some will say that such a statement is superidealistic, perhaps pure piffle, but during the past few years we have seen a distinct improvement in the tone of medical practice and I believe that this will continue. There will probably always be some sharp practice. There will be some sharp practice in all professions. When it ceases we shall be translated and all the schemes suggested at the present time will pass away. The only one left to inhabit the earth at that time will be the paid secretary, promoter or propagandist, and they will be so lonesome that they will pray to be speedily destroyed.

The medical profession should take an active interest in hospitalization. Hospital planning should be undertaken. A city or town of 15 000 people should not have three hospitals. One good hospital could take care of the needs of such a community. Better have one hospital that is full and active than three partially filled. The partially filled hospital has an enormous overhead. Always expecting to be filled, it keeps a large civilian staff always expecting that it will suddenly be called on to work overtime.

Hospital construction has run riot. Many hospitals are built as memorials, and some are built to tickle the vanity of hospital architects. This point has been emphasized so much that I need say nothing. One of the many increases in the cost of medical care has been hospitalization.

In some ways the depression has rendered a great service, as it has been demonstrated that many of the mechanical aids to practice are not necessary and that the cost of medical service may be greatly reduced and the quality maintained. Sir James Mackenzie stated the case well when he said "It would be ridiculous to put a man with a cut finger through such a process [a thorough examination] and expect him to pay for it, as it would be to expect an automobile owner to have the entire machine overhauled each time he has a puncture." Simplification of medical practice should be the aim of this organization. Such a simplification will mean a limitation of specialism and the reduction of specialists. A motion providing for the recognition and listing of specialists was passed last February before the Council on Medical Education and Hospitals.

When medical education was passing through such revolutionary changes a few years ago, state licensing boards formulated some stringent and restrictive rules which many of the poor schools could not meet and they were forced to close. With the improvements that have occurred in medical education, many of the requirements might be rescinded. Schools that are recognized as giving good courses should arrange their own schedules, determine the type of internship which they think best and the number of hours which should be devoted to a subject. Their aim and desire is to graduate the highest type of student, who should be admitted to practice when graduating from such a school without examinations before state boards.

There are certain imponderables which determine one's ability to practice and these are not based on studies, schemes, curriculums or time schedules.

#### Address of Vice President, Rudolph Matas

The Speaker introduced the Vice President, Dr Rudolph Matas, who addressed the House.

*Mr Speaker, Gentlemen of the House of Delegates*

In this position of vice president we have an office that has been regarded as a sinecure. I thought that before this honor was conferred on me, but I have since reconsidered. During the past year of my incumbency as vice president I have been quite busy. The first part of the year, most of the year in fact, has been spent in praying and getting all the help that I could in all the churches for the preservation of the life of the President so that I might not be brought face to face with all the problems that he has had to deal with, and I am delighted to see that through divine intervention we have preserved our President and he maintains this magnificent presence that he gives us this morning.

That is one occupation, and you see that it is a serious one. The next has been the importance of my learning something of the problems that are involved in the American Medical Asso-

ciation in the event that the dire disaster should come and the President should fail and I should have to stand in his place. That has kept me very much worried and as a consequence the habit has been beneficial, for I have learned a great deal, things that I have never suspected, because I have been limiting myself to the surgical side, and now I have learned a great deal more about the executive work and particularly about the economics of the medical profession which I knew nothing about at all. So it has been educational and it has been useful to me through the honor and the utility that it has brought to me. It has been a very profitable year in making me acquainted with problems that I had never met before.

I appreciate this opportunity. What has been said to you before covers the ground, and I feel that what I have learned during the past year is quite sufficient to make me understand that I must not abuse your patience. You have too many problems to consider for me to be occupying your time now.

I only wish to thank your very distinguished and able Speaker and particularly the gentlemen present for this opportunity of meeting face to face the solons of the medical profession of America.

## REPORTS OF OFFICERS

### Report of the Secretary

Dr. Olin West then presented his report as Secretary, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the exception of that portion relating to an amendment to the Constitution which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

### Resolution on Death of Dr. Mitchell

The Secretary read the following resolution from the Board of Trustees commemorating the death of Dr. Albert R. Mitchell, which was made a matter of record:

The Board of Trustees of the American Medical Association at its session in Milwaukee, June 11, expresses its deep appreciation of the loyal constructive and understanding efforts of Dr. Albert R. Mitchell in behalf of the physicians of this country and its deep sense of personal loss in his death.

For seventeen years Dr. Mitchell attended practically without a single omission the meetings of the Board of Trustees and many of the sessions of its Executive Committee. He gave to the American Medical Association his best judgment and fought for its ideals and for the promulgation of plans for its development with an intensity that represented his whole spirit.

To the family of Dr. Albert R. Mitchell the Board expresses its sincere sympathy in the loss of this humane and socially minded physician.

### Report of the Board of Trustees

The Secretary presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of the Board of Trustees and Secretary, with the following exceptions:

The report on the Bureau of Medical Economics was referred to the Reference Committee on Medical Economics, the report on the Bureau of Legal Medicine and Legislation to the Reference Committee on Legislation and Public Relations, the report on the Bureau of Health and Public Instruction, to the Reference Committee on Hygiene and Public Health, and the resolution at the end of the Board's report, to the Reference Committee on Rules and Order of Business.

### Report of the Judicial Council

Dr. George E. Follansbee, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers.

### Report of the Council on Medical Education and Hospitals

General Merritt W. Ireland, Washington, D. C., presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education.

### Report of the Council on Scientific Assembly

Dr. Irvin Abell, Kentucky, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

## Report of the Committee on Legislative Activities

Dr. Charles B. Wright, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

Following the New Orleans meeting, Dr. West, Dr. Cary, Dr. Crockett and the chairman of the Committee on Legislative Activities were approached by influential members of the American Legion, who suggested that the members of the Association attend the meeting of the Rehabilitation Committee of the Legion, at Portland, Ore. Later Dr. West received an invitation from National Commander Stevens, asking for representation consisting of Dr. E. H. Cary, President of the American Medical Association, Dr. F. S. Crockett, a member of the auxiliary committee on veterans' affairs, and the chairman of the Committee on Legislative Activities. The group thus invited conferred in Chicago with Dr. West, and it was decided to accept the invitation. This decision was approved by the Board of Trustees.

We spent from Sept. 10 to 16, 1932, at the meeting named, where we were well received by the representatives of the American Legion. Dr. Cary was invited to speak before the convention of the Legion and did so. We conferred with the subcommittee of the Rehabilitation Committee of the Legion on Medical and Hospital Care, and on invitation we gave our views on the care of veterans, interpreting to the best of our ability the attitude of the profession. We conferred also with the medical director of the Veterans' Administration, Dr. Griffith, and the administrator, General Hines. For the first time we had an opportunity to discuss the situation with the administrator with the utmost frankness. He suggested that we meet him in Washington and go over some of the problems of the Veterans' Administration, particularly the problems relating to the cost of the care of veterans suffering from general medical and surgical disabilities.

A resolution was adopted by the Legion, asking that representatives of the American Medical Association be named to serve on the advisory committee of the National Rehabilitation Committee of the Legion, and at the request of the national commander of the Legion, approved by the Board of Trustees of the American Medical Association, Dr. F. S. Crockett and the chairman of the Committee on Legislative Activities were appointed on the advisory committee. So far there has been no meeting of the committee and no matters have been brought before us for consideration.

Following the Portland meeting we were formally invited by General Hines to a conference in Washington with the Veterans' Administration. On October 9, Dr. Cary, Dr. West, Dr. Crockett and the chairman of the Committee on Legislative Activities went to Washington and then spent two days there in conference with the administrator of veterans' affairs, and with Dr. Griffith and other representatives of the administration. At this conference General Hines outlined the program which later he recommended to Congress, calling for a very extensive reduction in the cost of the care of veterans.

Later the American Medical Association was invited to send its representatives before the Joint Congressional Committee on Veterans' Affairs. Dr. Cary and Dr. Woodward, director of the Bureau of Legal Medicine and Legislation, were delegated to appear. Their discussions are a matter of record and are accessible to any one in the published "Hearings Before the Joint Congressional Committee on Veterans' Affairs, Congress of the United States, 72d Congress, Second Session, Volume I." The Joint Committee later reported only that the control of veterans' affairs had been delegated to the President and that the situation was therefore, in the hands of the chief executive.

Very briefly stated, the formal activities of the committee have been related above. During all the time they were going on, however, Dr. Cary was discussing the problem of veterans' care before state medical associations and other medical organizations, and the committee was carrying on a voluminous correspondence. The chairman of the committee received and answered approximately one thousand letters from various parts of the country, from individuals and groups, asking for information concerning the situation. Judging from this correspondence and from reports in the press, county and state medical associations did a great deal of active work with reference to the problem of veterans' relief.

Prior to the change in the administration at Washington, President Hoover vetoed the Independent Offices Appropriation Act, containing the appropriation for the Veterans' Administration for the fiscal year 1933-1934. He thus left the slate clean for President Roosevelt. President Roosevelt, immediately following his inauguration, took the definite action with respect to this matter that is now familiar to all. It is unnecessary to call your attention to the efforts that are now being made to induce him to modify the action he took to effect economies in the cost of the Veterans' Administration. Free clinics have been established for veterans in various communities by the American Legion, and, on the basis of the observations and experiences of these clinics, demands are being made for the continuance of hospitalization and medical care for all classes of veterans. In addition to this, local communities and state legislatures have protested against the burden that has been thrown on them in the care of needy veterans.

As an illustration of the local interest in this problem, may I call your attention to House Joint Resolution 58, passed by the legislature of the state of Illinois, memorializing the Congress of the United States to include in the independent offices appropriation bill such provisions and appropriations as will permit the continuation of contracts between the federal government and the state to meet the emergency in the state of Illinois. The preambles to the resolution describe the situation as follows:

WHEREAS Since the ending of the World War due to an insufficient number of beds available for the care and treatment of mentally disabled veterans within federal hospitals Illinois state facilities have been utilized under contract with the Veterans Administration at a cost much less than the operating cost of the same comparable federal beds and as a result of which the state of Illinois has received from one hundred fifty to two hundred thousand dollars annually and

WHEREAS There are now being cared for in Illinois state institutions 1 050 mentally disabled veterans committed by various county courts and instructions issued by the Veterans Administration indicate existing contracts will become a responsibility of the taxpayers of the state of Illinois and further there are thousands of mentally disabled veterans in Illinois not confined in any institutions whose only means of livelihood for the most part will also be taken away and the balance greatly reduced which will obviously cause a great number of new commitments thereby forcing the state of Illinois to appropriate four hundred thousand dollars or more, for the biennium to meet the cost of care which these unfortunate veterans deserve or to refuse such care

The legislatures of other states have initiated similar action.

To illustrate the trend of congressional opinion, I call your attention to a bill, Senate 185, introduced by Senator George. This bill proposes to provide, through an amendment to an act already in force, for the "Domiliary care to all persons honorably discharged from the Army, Navy, or Marine Corps of the United States where they are suffering with permanent disabilities, tuberculosis or neuropsychiatric ailments and medical and hospital treatment for diseases or injuries. Just how far reaching the proposed act would be, cannot at this time be determined.

Just how many veterans need care who cannot obtain it is not known. We have no facts on which to determine the number, although we have fairly definite opinions. This is a matter which should receive careful consideration by our state and county medical organizations. We urge that they interest themselves and cooperate in the readjustments in caring for needy veterans, made necessary by recent congressional and presidential action. We should obtain as definite information as is ascertainable concerning the extent of the problem, so that we may be in a position to advise properly as opportunities arise.

To conclude the discussion on veterans' affairs, it is our opinion that the American Medical Association should support the President of the United States in his exercise of the authority that has been conferred on him. The Congress has granted him authority to determine the nation's policy in regard to veterans. He has acted courageously, according to his best judgment. If events prove that he has made an error of judgment, he will, we believe, promptly correct that error on his own initiative. Your committee deplors the attempts that have been and are being made to deprive the President of the authority that has been granted to him.

We believe that it is the duty of the government to provide medical and hospital service at government expense for the relief and cure of such disabilities of veterans as are of service origin. This service could be rendered in government hospitals

and homes, or elsewhere, in whatever manner is of the greatest benefit to the disabled veterans. The President has promised such care to veterans of this class. We believe further that care of this type should be provided at government expense for veterans disabled by neuropsychiatric and tuberculous disorders and for veterans totally disabled by other chronic diseases, and by injuries, when those veterans are unable to provide for themselves. Finally, however, we are of the opinion that medical and hospital service for the treatment of acute medical and surgical diseases of veterans should be provided in all cases by the communities in which the veterans reside, such diseases being obviously not of service origin. Veterans in such cases should be treated in exactly the same manner as are other members of the community in which the veteran resides. We believe that this course is in the best interests of the veterans themselves.

We must recognize that injustice and inequalities incorporated into the law, on the demands of special groups and individuals—in many instances not at the request of the American Legion—over a period of years, by congresses too liberal with the taxpayers' money cannot be corrected overnight. We believe that the President will do his best and that he should be supported. We recommend that he be advised of the attitude of the American Medical Association with respect to this matter.

Changing the subject we call attention to the excellent work that is being done by the Bureau of Legal Medicine and Legislation. Exact information is always available through this bureau on legal aspects of the practice of medicine and on legislative activities, both state and national. A brief résumé of the activities of this bureau was published in the April number of the AMERICAN MEDICAL ASSOCIATION BULLETIN.

Finally, may we call attention to another matter that is, we believe, of vital interest to the public and the medical profession that is, the corporate practice of medicine. The courts in a number of states have held that the corporate practice of medicine is unlawful. If this can be legally established throughout the country, it will do a great deal now and in the future to protect the public and the medical profession from exploitation. We urge delegates to stimulate interest in this matter in their respective state organizations. Exact information concerning it is available in the Bureau of Legal Medicine and Legislation.

Respectfully submitted

COMMITTEE ON LEGISLATIVE ACTIVITIES  
CHARLES B. WRIGHT, Chairman

(To be continued)

## Association News

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a.m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

June 27 Holiday Traffic Tragedies.  
June 29 Vacation on Tour

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

July 1 Look Out for Sunburn

**Education of the Public**—Education for a higher allotment of the budget to medical care carried out directly by the physician is largely ineffective for under the circumstances he is assumed to be a special pleader. This reaction is always aroused whenever the profession attempts through legislation to raise the standards of licensure or to enforce public health measures and frequently blocks such attempts. Education of the public is preferably, then, a responsibility of the public health services and should be recognized as such—Harvey, S. C. *Oikonomia Medika, Jale J Biol & Med* 5:323 (March) 1933.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**Personal**—Dr Benjamin D Luck, Pine Bluff, was recently made a member of the state board of nurse examiners, succeeding Dr Mahlon D Ogden Little Rock.—Dr Allen B Jemison has been elected director of the Jefferson County Health Department, succeeding Dr George A Hays, resigned.

**Society News**—At the meeting of the First Council District Medical Society in Piggott, May 24 speakers included Drs Joel C Land, Walnut Ridge, on asthma, William T Black Memphis, Tenn, uterine bleeding, Robert Lyle Motley, Memphis, heart disease, and Junius B Futrell Rector, obstetric complications.

### CONNECTICUT

**Professor Ferris Resigns**—Dr Harry Burr Ferris has resigned as professor of anatomy and head of the department at Yale University School of Medicine a position he has occupied since 1895. Dr Ferris who is 68 years of age, received his medical degree from Yale University School of Medicine in 1890. He became an instructor in anatomy at the medical school in 1892 assistant professor and in 1895 professor, and was appointed E. K. Hunt professor of anatomy in 1897. Dr Ferris will be succeeded at Yale by Edgar Allen, Ph D, dean of the University of Missouri School of Medicine, Columbia, July 1.

### FLORIDA

**Reorganization of Health Department**—Reorganization of the Tampa Health Department, which was recently recommended to the city board of aldermen was to have been effected June 1 with the adoption of a new city budget. Service of part time physicians on the staff will be discontinued, and two physicians will be employed on a full time basis. A net saving of \$5,120 a year under the new plan is anticipated.

**Whitehurst Sentenced**—Tyree C Whitehurst was recently sentenced to five years in the federal prison at Atlanta following his conviction of having used the mails in connection with a scheme to represent himself as a doctor it is reported. In pronouncing sentence, Judge Ackerman is said to have stated:

In this case I am convinced that you are a professional abortionist and under the circumstances I feel it my duty to the community to put you where you cannot continue this nefarious practice.

Whitehurst has also been convicted of practicing medicine without a license (THE JOURNAL, Jan 24, 1931, p 277). At that time he was given a sentence of a year and a day in the state prison at Raiford. Whitehurst claimed at one time that he graduated from the University College of Medicine, Richmond, Va, in 1898 and that he was licensed in Florida in 1915. Examination of the alumni list showed that he was not a graduate of the university college or of the Medical College of Virginia which absorbed the former institution in 1913. There is said to be no record that a Florida license was ever issued to him.

### ILLINOIS

**Physicians Honored**—The Christian County Medical Society gave a dinner, May 31, in honor of Drs George J Rivard, Assumption, Campbell A Stokes, Edinburg and Joseph F Miller, Palmer, veteran members of the society in point of service. Dr Rivard has spent fifty-two years in the practice of medicine in the county, Dr Stokes fifty-one years, and Dr Miller forty-five years.

**Society News**—Dr Horace W Soper, St. Louis, addressed the St. Clair County Medical Society June 1, on "Diagnosis of Diseases of the Rectum and Colon."—Dr Oscar T Schultz, Evanston, among others addressed a joint meeting of the Vermilion County Medical Society and the Vermilion Bar Association, Danville, May 2, on "Relation of Medicine to Law in the Administration of Justice."—Dr James Curtis Lyter, St. Louis, addressed a recent meeting of the Union County Medical Society at Anna on diseases of the coronary arteries.—Dr Frank H Lahey, Boston, addressed the Winnebago County Medical Society, Rockford, June 13, on "Maligancy of the Colon and Rectum."

**Milk-Borne Epidemic**—Thirteen cases were involved in the only epidemic in Illinois in 1932 that was directly attributable to contaminated milk, according to *Illinois Health Messenger*. The disease, an infection for the most part fairly characteristic of scarlet fever was limited strictly to users of one unpasteurized milk supply. In one family of three members, two who drank only pasteurized milk escaped the disease, while the other member who used raw milk from the dairy in question became ill. Of the thirteen patients, ten had a rash fairly typical of scarlet fever. Most of them had some degree of sore throat. It was officially reported that an employee at the dairy had scarlet fever. The cow yielding milk with positive evidence of hemolytic streptococci was removed from the herd and the sale of milk from the dairy was discontinued temporarily.

### CHICAGO

**Faculty Changes at Loyola**—Recent appointments to Loyola University School of Medicine include the following:

Gregory R Waters, clinical assistant in dermatology.  
Herbert E Landes, clinical professor in genito-urinary surgery.  
Chester H Warfield, assistant professor in the department of medicine.  
Irvin F Hummon, assistant in anatomy.  
Salvatore J Nigro, clinical assistant in gynecology.  
Irving Francis Barnett, clinical instructor in ophthalmology.  
Jerry J Kearns, clinical assistant in surgery.

**Society News**—Dr Roberto Alessandri, director of surgery, Royal University of Rome, lectured on "Surgery of the Stomach" at Columbus Hospital, June 10, a dinner in his honor preceded the talk.—Dr E Gorter, Leiden, Holland addressed the Chicago Pediatric Society, May 20, on "Copper and Anemia in Childhood."—Dr Anton J Carlson spoke, among others before the Chicago Society of Internal Medicine May 22, on "Endocrinology in the Laboratory and in the Clinic."—Drs Aaron E Kanter and Perry J Melnick presented a paper on "Thecomas of the Ovary" before the Chicago Gynecological Society June 16, and Drs William M Spear, Oakdale, Iowa, and Henry C Hesselstine, one on "Significance of Menstrual Disturbances in Pulmonary Tuberculosis."

**Two Millions for a Dental Clinic**—More than \$2,000,000 has been bequeathed to the University of Chicago by the late W G Zoller to establish and maintain a free dental dispensary, according to the *Chicago Tribune*. The income will be used by the university for the purpose of equipping and maintaining dispensaries and laboratories and to supply competent and skillful dental service, including diagnostic aids to the needy and poor, free of charge in such manner that the greatest number of people may secure skilful treatment to enable them to be relieved and to prevent the numerous ills which result from neglect of the teeth." Other benefactions include \$10,000 each to the Central Free Dispensary and the Home for Destitute and Crippled Children, and \$5,000 to the Chicago Home for Incurables. Mr Zoller was formerly vice president and treasurer of the Bell and Zoller Coal Company.

### INDIANA

**Society News**—Dr Lewis J Pollock, Chicago spoke before the St. Joseph County Medical Society in South Bend, May 31, on "Common Conditions Met in Clinical Neurology."—At a meeting of the Porter County Medical Society in Valparaiso, May 31, Dr Arthur G Miller Hobart, lectured on "Female Sex Hormones."—The Jasper-Newton Counties Medical Society heard Dr Harry E Mock, Chicago, discuss "Traumatic Head Injuries," at its meeting in Kentland, May 26.—Dr John Sater Nixon, Indianapolis, addressed the Morgan County Medical Society, May 17, on "Early Diagnosis of Acute Appendicitis."

### IOWA

**Society News**—Drs Francis L Lederer and Frederick H Falls, Chicago, addressed the Dubuque County Medical Society at Dubuque May 9 on "Modern Concepts in the Diagnosis and Treatment of Sinus Conditions and 'Pregnancy and Tuberculosis,' respectively.—The Black Hawk County Medical Society, Waterloo, was addressed, May 16, by Dr Cyrus W Rutherford, Iowa City, on squint, and Dr Carl L Nelson Waterloo, on appendicitis in childhood.

### MARYLAND

**Lectures on History of Medicine**—Dr Henry E Sigerist, director Institute of the History of Medicine, Johns Hopkins University School of Medicine, Baltimore, opened a series of lectures at the University of Maryland, March 16 on the history of medicine. Dr Owsei Temkin and Dr John Rathbone Oliver associates in the history of medicine, Johns Hopkins, spoke March 23 and 30, respectively. Dr Oliver also delivered lectures in this series on consecutive Thursdays through May 4.

**Society News**—Dr Arthur G Barrett, Baltimore was installed as president of the Maryland Academy of Medicine and Surgery for his sixteenth consecutive term at its annual meeting, April 18. Dr Thomas B Fletcher, among others, spoke on 'The Pituitary Gland and Its Diseases'.—Dr William Fletcher Shaw, professor of gynecology and obstetrics, University of Manchester, England, addressed the gynecologic and obstetric section of the Baltimore City Medical Society, May 11, on maternal mortality.

**Advisory Committee on Sanitation**—The appointment of an advisory committee on sanitation to serve the Baltimore Health Department especially on matters of environmental hygiene, has been announced. Dr William H Howell, director emeritus of the Johns Hopkins School of Hygiene and Public Health, is chairman of the committee. Wilmer H Schulze, who since 1929 has been chief of the division of chemical technology, was made director of the new bureau of environmental hygiene in the health department.

**Personal**—Dr William H Wilmer, director of the Wilmer Institute of Ophthalmology, Johns Hopkins University School of Medicine, Baltimore, received, March 25, the decoration of the Angelo Secchi Academy of Science from Georgetown University, Washington, D C, where, for nineteen years, he was a member of the faculty. Presentation was made on the university's celebration of Founders Day.—Dr Adolf Meyer, director of the Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, delivered the fourteenth Maudsley lecture of the Royal Medico-Psychological Association in London, May 17. His subject was 'Psychiatry and Mental Hygiene'.

### MASSACHUSETTS

**Campaign to Reduce Appendicitis Deaths**—June 12 opened a week's campaign of education in Massachusetts to reduce deaths from appendicitis. In Philadelphia, mortality from acute appendicitis was materially reduced following a campaign of education. Cooperating in the Massachusetts campaign were the state department of health, the state pharmaceutical association, the Boston Retail Druggists' Association, and the public health committee of the Massachusetts Medical Society.

**Portraits Presented**—At a dinner, May 5 portraits of Dr Harvey Cushing and Dr Henry A. Christian were presented to Harvard University Medical School and Peter Bent Brigham Hospital, Boston, respectively. Dr Cushing recently retired as Moseley professor of surgery at the university, and Dr Christian, professor of the theory and practice of physic at the university, is physician in-chief to the hospital. He was dean of the medical school from 1908 to 1912. The dinner was attended by the faculty of the university and the governing boards of both university and hospital.

### MINNESOTA

**Personal**—Dr Albert E. Olson, Duluth, has been appointed a member of the board of regents of the University of Minnesota.—Dr Edward A. Meyerdig, St Paul, has been promoted to the grade of colonel in the medical reserve corps.

**Basic Science Law Violations**—Mitchell Jurdy, "naturopathic physician and physical culturist," was sentenced, recently, to serve six months in the Minneapolis Workhouse, for practicing healing without a basic science certificate. As this was the second offense of Jurdy, the sentence was not suspended. In 1932 Jurdy pleaded guilty to a similar charge, having treated a patient with epilepsy, it was claimed. In the recent instance, Jurdy was said to have treated a patient suffering with Hodgkin's disease. C. W. Brunelle, alias "Chief Little Cloud" pleaded guilty at Faribault to a charge of practicing healing without a basic science certificate, March 30. 'Chief Little Cloud' is a half breed Chippewa Indian and is employed by the city of Minneapolis as a garbage collector. During his spare moments, and particularly on Saturday afternoons and Sundays he has been making a specialty of driving down to Faribault to see a number of patients," the state board reports. In the present instance he was alleged to have diagnosed the ailment of a woman as "bone rheumatism" and left some medicine, making a charge of \$7.

### MISSOURI

**Dr Conley Appointed Dean**—Dr Dudley S. Conley, Columbia, professor of surgery, University of Missouri School of Medicine, has been appointed dean of the institution to succeed Edgar Allen Ph.D., at the beginning of the next school year. Dr Conley who graduated from Columbia University College of Physicians and Surgeons New York, in 1906, has been connected with the University of Missouri since 1919.

Dr Allen will become professor and head of the department of anatomy at Yale University School of Medicine, New Haven. He has been dean of Missouri since 1930 and professor of anatomy since 1923. From 1919 to 1921 he was instructor and associate in anatomy, Washington University School of Medicine.

**New Health Officer and Hospital Commissioner of St. Louis**—Dr Joseph F. Bredeck assumed the duties of health commissioner of St. Louis, April 20 replacing Dr Max C. Starkloff, who served in the position for thirty-two years. Dr Bredeck graduated from Washington University School of Medicine in 1914. He was licensed in the same year. In 1917 he received the degree of doctor of public health from the University of Pennsylvania. Dr Ralph L. Thompson, since 1907 professor of pathology, St. Louis University School of Medicine, was recently appointed hospital commissioner of St. Louis, succeeding Dr Curtis H. Lohr. Dr Thompson is also director of the National Pathological Laboratory in St. Louis. He graduated from Harvard University Medical School in 1900. For three years previous to his appointment in 1929 as hospital commissioner, Dr Lohr was superintendent of the isolation hospital (THE JOURNAL, June 15, 1929, p. 2029).

### NEW JERSEY

**Personal**—Dr Jacob Allen Patton, Newark, medical director and second vice president of the Prudential Life Insurance Company, will retire from active duty with the organization, July 1 after thirty-eight years of service, and will make his home in California. Dr Patton, a graduate of Rush Medical College, Chicago, became associated with the Prudential company in 1895.

### NEW MEXICO

**State Medical Election**—Dr Henry A. Ingalls, Roswell, was inducted into office as president of the New Mexico Medical Society at its annual meeting May 19, and Dr Charles F. Milligan, Clayton was named president-elect. Dr Leo B. Cohenour, Albuquerque, was reelected secretary. The next annual session will be held in Las Vegas in May, 1934.

### NEW YORK

**Personal**—Dr James L. McCartney, director of classification, New York State Department of Correction, has been awarded a grant of \$1,000 by the Thomas W. Salmon Memorial Committee of the New York Academy of Medicine to investigate the classification of prisoners and draw up a handbook on classification for use in prisons.

**Dr Chapin Given University Medal**—At the commencement exercises of Columbia University June 6 Nicholas Murray Butler, president, presented the University Medal for excellence to Dr Henry Dwight Chapin, emeritus professor of diseases of children, New York Post-Graduate Medical School and Hospital, New York. The medal was awarded to Dr Chapin in recognition 'of his outstanding contribution to problems relating to the care of children'.

**Letchworth Village Nears Completion**—Appropriate ceremonies marked the laying of the cornerstones for eleven new buildings at Letchworth Village, June 14. The completion of these structures, which will be within a year, will make this the largest state institution for mental defectives, according to the *State Charities Aid Association News* and will complete the original building program proposed in 1908. With a total of ninety-three buildings in use, covering 2,234 acres of ground, there will be accommodations for 3,500 mentally defective children. Dr Charles S. Little, the first superintendent, is still in charge of the institution.

**Anniversary of Antituberculosis Campaign**—The twenty-fifth anniversary of the antituberculosis campaign in upstate New York was observed June 8, at the annual Conference of State and Local Committees on Tuberculosis and Public Health of the State Charities Aid Association. Among the speakers were Gov. Herbert H. Lehman, who spoke on 'The State's Interest in the Control of Tuberculosis,' and Dr Thomas Parran, Jr., state health commissioner, on 'Common Interests Between the Control of Tuberculosis and Syphilis.' In 1908, tuberculosis was said to be the greatest single cause of death in the commonwealth, with a rate of 151.9 per hundred thousand of population. A rate of 59.2 was recorded in 1932, a reduction of 61 per cent.

### New York City

**Annual Etching Exhibition**—The Haden Etching Club, composed of dentists and physicians whose hobby is etching, held its second annual exhibition at the Kennedy Galleries, May 15-27. The club is named in honor of Sir Francis Sey-

mour Haden, a surgeon and an etcher Edward Kennedy, DDS, was the prize winner for his etching and aquatint, 'Gulls' Other exhibitors included

Dr Hermann Fischer	Dr Joseph F Saphir
Dr Leigh Harrison Hunt	David Schoen DDS
Dr Harris P Mosher Boston	Walter C. Sinnigen DDS
Dr Neyer M. Melicon	Bernard W. Weinberger DDS
Dr Henry Minsky	Dr Henry Smith Williams
Dr Benjamin F Morrow	Harold S. Vaughan, M D DDS

Only two of the exhibitors, Charles Berger, DDS, and Dr Laurence D Redway, depicted medical subjects in their compositions

**Department of Forensic Medicine**—The establishment of a department of forensic medicine at the University and Bellevue Hospital Medical College has been announced. Medical examiners and toxicologists will be trained in the department, which is considered an initial step toward establishing a system of scientific crime detection in this country to correspond with the system of medicolegal institutes of continental Europe. Dr Charles Norris chief medical examiner of New York, will head the department as professor of forensic medicine and Dr Harrison S Martland, chief medical examiner of Essex County Newark N J, has been named associate professor. Other members of the department will include Alexander O Gettler Ph D, city toxicologist, who will become professor of toxicology, Dr Douglas Symmers director of laboratories at Bellevue Hospital who will be professor of gross pathology, Dr Armin V St. George, assistant professor of gross pathology, and Dr Thomas A Gonzales deputy chief medical examiner of New York, assistant professor of forensic medicine. The curriculum planned by the new department will include a required short course to fourth year medical students, covering salient points as to what constitutes medical examiners cases, proper signing of death certificates, and testimony in court, an optional laboratory course to fourth year students consisting of a month's work in the medical examiner's office assisting at necropsies, a graduate course of three years in the office of the medical examiner leading to a degree, and a graduate course of two years in toxicology leading to a degree. The required course for seniors will consist of six lectures. Laboratory work for fourth year students and graduates will include attendance at necropsies the taking of postmortem notes and laboratory work in connection with microscopic examination of sections and bacteriological examinations

## NORTH DAKOTA

**State Medical Election**—Dr Jesse W Bowen Dickinson, was inducted into office as president of the North Dakota State Medical Association at its annual meeting, June 1-2, in Valley City. Dr Clyde E Stackhouse, Bismarck, was named president-elect. Other officers elected are Drs Archibald D McCannell, Minot, and William A Gerrish, Jamestown, vice presidents, Dr William W Wood, Jamestown treasurer, and Dr Albert W Skelsey, Fargo, reelected secretary

## OHIO

**Personal**—George B Ray, Ph.D, associate professor of physiology, Western Reserve University School of Medicine, Cleveland has been appointed professor of physiology and pharmacology at Long Island College of Medicine, succeeding Dr John C Cardwell, retired.—Dr Benjamin H Biddle, Sugar Grove, has been elected health commissioner of Fairfield County, succeeding Dr William R. Coleman, Bremen.—Dr Raymond T Holzbach has been appointed health commissioner of Salem, succeeding Dr Thomas T Church

**Fifty Years in Practice**—The Miami County Medical Society honored Dr Gamor Jennings, West Milton, with a dinner May 5, in recognition of his fifty years of medical practice. In addition to presenting him with a floral tribute the society adopted a resolution eulogizing Dr Jennings. Dr Jerold K. Hoener, Dayton, was the guest speaker on "Occiput Posterior Position." Other physicians recently honored for completion of many years in the practice of medicine are Drs Albert A Brooks Orrville, fifty-one years Henry E. Beebe, Sidney, sixty years, William H Hawley College Corner, forty-eight years, J Eugene Baker Marion, fifty years, and Robert G Steele, Melmore, fifty years

**Part Payment Plan**—A diagnostic and consulting service on a part pay basis for persons unable to meet full charges was placed in operation by the Academy of Medicine of Cleveland, June 5 following a study by the committee on economics. A card, indicating the percentage of payment he can afford, will be given the patient following an investigation of his financial condition for which a fee of fifty cents is charged. He will then be referred back to his physician or to a specialist selected by him from a list of the academy's members. The

academy will not refer any patients to specialists. Should a patient apply on his own volition for a rating, he will be referred to his family physician. If he has none, he will be asked to make his own selection from a list of general practitioners in his own locality furnished by the academy. The specialist will determine from the information on the card the percentage of his regular fee to be charged. The academy will furnish the specialists with form postcards to be filled out and returned.

**Society News**—Dr William E Thompson, Bethel, 98 years of age, was the guest of honor at a meeting of the Clermont County Medical Society, May 17, he reviewed the changes in medicine and medical practice during his seventy years in the profession.—The Logan County Medical Society held a round table on blood deficiency diseases, May 5, at Bellefontaine.—Speakers before the May meeting of the Ashtabula County Medical Society were Drs Jacob E. Tuckerman on "Chronic Malaria," and Clarence H. Heyman, both of Cleveland "Disabilities at the Knee Joint."—A recent meeting of the Lorain County Medical Society at Lorain was addressed by Dr Hubert C. King, Lakewood, on "Heart in Toxic Goiter"—The Mahoning County Medical Society and the Mahoning County Bar Association will be addressed, June 27, by Attorney F R Hahn, Youngstown, and Dr Edwin A Hamilton, Columbus on medicolegal considerations from the standpoint of the lawyer and physician, respectively.—Dr Harry Lee Huber, Chicago addressed the Toledo Academy of Medicine, June 2, on "Development of Pollen Therapy"

**Steuer Prize Awarded**—Western Reserve University School of Medicine recently awarded the Steuer Prize in anatomy to William B Seymour, Jackson, Mich., a sophomore for his volunteer study, last summer, of bone scars revealed by the X-rays in the limb bones of children, caused by piling up of lime when illness, dietary disturbances or shock temporarily stops growth. By examining 3700 records, Seymour was able to chart the growth of the limb bones from infancy till completion of growth at about 18. His study also establishes that growth of the limbs reaches maximum at the age of 14. The Steuer Prize is a memorial to the late Dr Herbert S Steuer, a graduate of the college in 1921, whose death occurred in the Cleveland Clinic disaster in 1928. Frederick Robert Mautz, Marion, senior, was awarded two prizes at the commencement, June 14, when he received his degree of doctor of medicine. One, the gift of Dr Edwin C. Garvin, class of 1894, is the income from a fund, given annually, to a member of the fourth year class who shows best knowledge, theoretical and practical of obstetrics. The second is the senior prize in surgery, conferred annually on the student in the graduating class who has shown best knowledge and greatest ability in surgery during his undergraduate course. This is the gift of Dr Elliott C. Cutler, formerly professor of surgery at the school and now occupying a similar position at Harvard University Medical School, Boston

## OREGON

**Personal**—Dr Wilford H Belknap, Portland, was elected president of the alumni association of the University of Oregon Medical School at the annual session, March 8. Dr Birchard A Van Loan, Portland, succeeded Dr Belknap as secretary.—Dr and Mrs David M Brower, Ashland, celebrated their fiftieth wedding anniversary, recently

## PENNSYLVANIA

**Society News**—Dr Armitage Whitman, New York, gave an address before the Huntingdon County Medical Society at Huntingdon, June 8, on infantile paralysis.—At a meeting of the Lycoming County Medical Society in Williamsport, June 9, Drs Louis H Clerf and Charles Mazer, Philadelphia, spoke on "Relation of Bronchoscopy to General Medical Practice" and "Phases of Endocrine Therapy," respectively.—A symposium on genito-urinary disease was presented before the Dauphin County Medical Society, June 6, by Drs John Oeslager, Jr, John L Lanshe and Samuel Grossman.—At a meeting of the Harrisburg Academy of Medicine, May 16, Dr Charles M Wainwright, Jr, Baltimore, spoke on "Bromide Poisoning"—Dr George W Crile Cleveland will be the guest speaker before the annual meeting of the Lehigh Valley Medical Society, July 31, in Mount Pocono

## Philadelphia

**Dr Riesman Resigns as Professor**—Dr David Riesman resigned recently as professor of clinical medicine at the University of Pennsylvania School of Medicine, a position he has occupied since 1912. He will continue as professor of

the history of medicine at the institution. Dr Riesman's last lecture as professor of clinical medicine dealt with a physician's conduct in relation to his fellow practitioners and his duties as a citizen.

**Dr Meeker Honored**—George H Meeker, LL.D., dean of the Graduate School of Medicine, University of Pennsylvania, since he established it in 1918, was honored at a dinner, June 1. A portrait of Dr Meeker was presented to the university by Dr George Morris Piersol on behalf of those in attendance and accepted by Dr Alfred Stengel, vice president in charge of medical affairs. Josiah H Penniman LL.D., provost of the university, was among the speakers and Dr George E de Schweinitz, emeritus professor of ophthalmology, presided. Dr Meeker also founded the department of pharmaceutical chemistry at the university in 1907 and continued as its dean to 1916, since which time he has been professor of chemistry at the University of Pennsylvania School of Medicine.

**Professors Appointed**—Drs George M Coates John Clayton Gittings and Isaac Starr, Jr., were recently appointed to professorships at the University of Pennsylvania School of Medicine. Dr Coates succeeds the late Dr George Fetterolf as professor of otolaryngology. He is at present professor of otorhinology in the university graduate school of medicine and in addition is chief of the department of otolaryngology at Presbyterian and Abington Memorial hospitals, associate surgeon to the ear, nose and throat department of Pennsylvania Hospital, and consulting surgeon to several other institutions. He is secretary of the American Laryngological Association. Dr Gittings, formerly professor of pediatrics, returns as the first regular incumbent of the William H Bennett professorship of pediatrics. He has been president of the Philadelphia Pediatric Society and the American Pediatric Society and is now professor of pediatrics in the graduate school of medicine. Dr Starr was appointed instructor in 1922, has since served as associate in medicine and assistant professor of clinical pharmacology, and now becomes the first Milton B Hartzell professor of research therapeutics. The chair was endowed by the late Dr Hartzell, who was professor of dermatology in the school of medicine. The new professors are graduates of the University of Pennsylvania.

**Hospital Purchases Franklin Manuscript**—The original manuscript of an inscription written by Benjamin Franklin for the cornerstone of the Pennsylvania Hospital, which was recently discovered in Germany and acquired by A. S. W. Rosenbach, Philadelphia bibliographer and dealer in rare books, has been bought by the hospital. Funds for the purchase were provided by contributors to the hospital through Dr Francis R. Packard who presented the manuscript at the annual meeting of contributors, May 1. The inscription reads:

In the Year of Christ  
1755  
George the Second happily reigning  
(For he sought the happiness of his People)  
Philadelphia flourishing  
(For its Inhabitants were publick spirited)  
This Building  
By the Bounty of the Government  
And of many private Persons  
Was piously founded  
For the Relief of the Sick and  
Miserable.  
May the God of Mercies  
Bless the Undertaking!

It is not known how the document happened to be in Germany. It was at one time in the possession of Robert Vaux, who was a manager of the hospital from 1823 to 1834. Franklin was the founder of the Pennsylvania Hospital, one of its designers and the author of two books about it.

## TENNESSEE

**Personal**—Dr Howard M. Francisco, Bolivar, has been appointed superintendent of Eastern State Hospital, Lyons View, succeeding Dr R. E. Lee Smith.—Dr Harley W. Qualls, Memphis, was recently elected secretary of the Tennessee State Board of Medical Examiners to succeed the late Dr Alfred B. DeLoach.

**Reorganization of State Health Department**—Activities of the Tennessee State Department of Health have been necessarily curtailed because of the reduction of almost 50 per cent in the appropriation for public health work. In the reorganization of the department, the services suffering the greatest reduction include those on tuberculosis and malaria control and trachoma work. Dental hygiene has been completely eliminated and health education and public health nursing have been reduced to a minimum.

## TEXAS

**Hospital News**—A new U. S. Marine Hospital at Galveston was dedicated in March, the hospital plant includes eight buildings.

**Health at El Paso**—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities, with a total population of 37 million, for the week ended June 10 indicate that the highest mortality rate (191) appears for El Paso, and the rate for the group of cities as a whole, 111. The mortality rate for El Paso for the corresponding period last year was 137 and for the group of cities, 107. The annual rate for eighty-five cities for the twenty-three weeks of 1933 was 117, as against a rate of 12.2 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

## VIRGINIA

**Portraits Unveiled**—Portraits of Dr Lewis Webb Chamberlayne, first professor of materia medica and therapeutics, and Dr Richard L. Bohannon, first professor of obstetrics and diseases of women and children, were unveiled during commencement week at the Medical College of Virginia, Richmond, recently.

## WEST VIRGINIA

**State Medical Election**—Dr Roy B. Miller, Parkersburg, was named president of the West Virginia State Medical Association at its annual meeting May 22, to serve from Jan. 1, 1934. Dr Delivan A. McGregor, Wheeling, now fills the presidency. Mr Joe W. Savage, Charleston, was reelected executive secretary. The next annual session will be held at Huntington in May or June, 1934.

**Dr McClue Appointed State Health Commissioner**—Dr Arthur E. McClue, New Cumberland, has been appointed health commissioner of West Virginia to succeed Dr William T. Henshaw, whose unexpired term would end May 31, 1935. Dr McClue is 35 years of age and a 1925 graduate of the University of Louisville School of Medicine, Louisville. He was formerly health officer of Hancock County. Dr Henshaw had been state health commissioner since 1921.

**Heart Association Organized**—The West Virginia Heart Association was formed at a meeting of the heart committee of the West Virginia Medical Association, May 22. Dr Oscar B. Biern, Huntington, was made president, Dr George H. Barksdale, Charleston, vice president, and Dr Raphael J. Condry, Elkins, secretary. Objectives of the newly formed society will be to gather and to disseminate information on the prevention and care of heart disease and develop and apply a uniform classification and study of heart disorders. When certain requirements have been accomplished the society hopes to become affiliated with the American Heart Association.

**Society News**—Dr James E. Hubbard addressed the Cabell County Medical Society in Huntington May 11, on "Cancer of the Buccal Mucous Membrane and Dr Chauncey B. Wright, 'Fracture of the Jaw'."—The Kanawha Medical Society recently heard Drs. Hugh A. Bailey and Robert King Buford, Charleston, discuss "Newer Methods in the Postoperative Management of Peritonitis Following Appendicitis" and "Borderline Hyperthyroids," respectively.—At a meeting of the Mercer County Medical Society in Princeton, recently, Dr John E. Cannaday, Charleston, spoke on "Surgical Aspect of the Gallbladder," and Dr Pat A. Tuckwiller, Charleston, "Jaundice."—Dr Moritz F. Petersen, Charleston, among others, spoke on "Diarrhea in Infancy" before the Fayette County Medical Society, May 9.—The Logan County Medical Society was addressed, May 17, by Drs. George F. Grisinger and Tyler R. Bohling, both of Beckley, on "Collapse Therapy in Tuberculosis" and "Tuberculous Laryngitis," respectively.—Dr Louis J. Karnosh, Cleveland, addressed the Ohio County Medical Society, Wheeling, June 2, on "A Psychiatrist's Anthology."

## WISCONSIN

**Personal**—Dr Elmer Klein, Baltimore, has been appointed director of the Milwaukee County mental hygiene clinic, succeeding Dr Roy E. Bushong, resigned.—Dr Harry E. Purcell was recently named president of the board of health of Madison.

**Society News**—Dr Arthur W. Rogers, Oconomowoc, was guest speaker before the Brown-Kewaunee County Medical Society, April 19, on mental disease.—Judge William E. Hailey discussed legislative problems concerning social medi-

cine before the April meeting of the Douglas County Medical Society—At a meeting of the Eau Claire and Associated Counties Medical Society April 24 the speakers were Drs. Oswald S. Wyatt, Minneapolis on "Appendicitis in Childhood," James B. Carey, Minneapolis "Diverticulitis of the Colon," and Harold E. Richardson, St. Paul "Cardiac Neurosis."—Dr. William A. Wagner, Oshkosh addressed the April meeting of the Manitowoc County Medical Society on "Complications of Pregnancy—Their Treatment and Prevention."—The Pierce St. Croix County Medical Society heard Judge O. Warnquist, judge of St. Croix County, speak May 11 on law relating to the indigent sick, and Dr. Hartwick M. Stang, Eau Claire, "Genito-Urinary Problems of Interest to the General Practitioner."—Dr. John A. Urner, Minneapolis addressed the Polk County Medical Society April 20 on "Contraception and the Recent Developments."—The physicians of Vernon, Monroe and Juneau counties organized a tricity medical society May 11 and elected Dr. Arthur E. Winter, Tomah, president. Dr. Gunnar Gundersen, La Crosse spoke on "Pyloric Obstruction."—Speakers before the Central Wisconsin Society of Ophthalmology and Oto-Laryngology at Wisconsin Rapids May 15 included Dr. Erling W. Hansen, Minneapolis, on "Syphilis of the Ear, Nose and Throat."

### GENERAL

**Journal Transferred**—Beginning in January 1934 the *Journal of Nutrition* will be published by the Wistar Institute, Philadelphia, instead of the American Institute of Nutrition. Acquisition of the journal is said to be the first step in the creation of a department of nutrition at the Wistar Institute.

**Hebrew Medical Journal**—The third issue of the *Hebrew Physician* said to be the only medical journal published in Hebrew outside of Palestine has recently appeared. It contains seven major original articles and sections on Palestine and Medicine, Talmud and Medicine and Hebrew Medical Terminology, in addition to book reviews and summaries in English of the articles. Dr. Moses Einhorn, New York, is editor. The journal is published occasionally.

**Dr. Willstaetter Awarded Medal**—Dr. Richard Willstaetter, Munich, has been awarded the Willard Gibbs Medal of the Chicago Section of the American Chemical Society. The medal will be presented to Dr. Willstaetter September 13 during the eighty-sixth annual meeting of the American Chemical Society in Chicago. The award is made particularly for Dr. Willstaetter's work in the chemistry of chlorophyll. His research with cocaine alkaloids culminated in the synthesis of cocaine and made possible the commercial synthesis of local anesthetics. He attached the quinnines and quinoid substances and discovered orthoquinone and proof of the structure of aniline black. Dr. Willstaetter's experiments with the carotinoids have made possible the separation of the individual components of this group.

**Industrial Accident Boards and Commissions**—The annual convention of the International Association of Industrial Accident Boards and Commissions will be held at the Congress Hotel, Chicago, September 11-15, Wednesday, September 13 will be devoted entirely to medical and surgical subjects by the following Chicago physicians:

Nathan S. Davis, III, "Difference Between Backache Due to Trauma and That Due to Disease."

John D. Ellis, "Routine Examination of the Injured Back."

Paul B. Magnuson, "Congenital Anomalies and Arthritis as Contributing Causes in Injuries of the Spine."

Hollis E. Potter, (1) "The Wedge Shaped Vertebra," (2) "Some Distinctions Between Healed Fractures and Healed Vertebral Disease."

Claude R. G. Forrester, "Reduction of Disability by Fusion of Vertebrae After Back Injury."

Philip H. Kreuzer, "Shortening the Period of Disability After Fractures of the Spine."

LeRoy P. Kuhn, "Final Disposition of Back Injury Cases."

**Vaccination Defined**—The scarification of an arm and the introduction of vaccine virus do not constitute vaccination when immediately thereafter the vaccination wound is painted with tincture of iodine according to a decision of Justice Adkins of the Supreme Court of the District of Columbia. The laws of the district provide that no child shall be admitted into the public schools who has not been duly vaccinated or otherwise protected against smallpox. The parents of two children having failed to procure their admission into the public schools without vaccination took them to a physician to be vaccinated. After he had scarified their arms and applied the vaccine, he went into an adjoining room to make out the necessary vaccination certificates. On his return he found that tincture of iodine had been applied to the vaccination wound of one of the children. The father nevertheless petitioned the Supreme Court for a writ of mandamus to compel the super-

intendent of schools to admit the children. Justice Adkins held, however, that there had been no vaccination as required by law and dismissed the petition.

**Pacific Northwest Medical Association**—The annual meeting of the Pacific Northwest Medical Association will be held in Vancouver, B. C. July 4-7, under the presidency of Dr. Bertram D. Gillies, Vancouver. Guest speakers, each of whom will give several addresses and conduct clinics, include:

Dr. Alfred T. Bazin, Montreal, "Acute Osteomyelitis of the Colon and Rectum and Lesions of the Breast."

Dr. Charles H. Best, Toronto, "Recent Work on Carbohydrate Metabolism, Fat Metabolism and Liver Function Tests."

Dr. William Boyd, Winnipeg, "Tumors of the Neck, Pathology of the Breast Regarded as Disordered Physiology and Recovery from Infection."

Dr. John G. Fitzgerald, Toronto, "Meningococcal Meningitis, Staphylococcal Infections and the Nature of Antigens."

Dr. Alvah H. Gordon, Montreal, "Migraine, Diagnosis of Disease with Coincident Enlargement of the Liver and Spleen."

Dr. Alvin T. Mathers, Winnipeg, "Medicolegal Problems, Psychoneuroses and Sleep and Its Disorders."

Dr. Samuel A. Kinnier, London, England, "Visceral and Affective Epilepsy, Cerebral Tumors and Hysteria from the Physiologic Side."

Dr. David E. S. Wishart, Toronto, "Vertigo, Mastoiditis in Children and Sinusitis in Children."

**Medical Bills in Congress—Bills Introduced** S 1831 introduced by Mr. Schall, Minnesota, H R 5866 and H R 5882 introduced by Representative Smith, Washington and H R 5908, introduced by Representative Gray, Indiana, propose to reenact all public laws granting medical or hospital treatment, domiciliary care, compensation and other allowances, pensions and retirement pay to veterans that were repealed by the Economy Act approved March 20, 1933. S 1842 introduced by Senator Hastings, Delaware, and H R 5978 introduced by Representative Pierce, Oregon, propose to authorize the dissemination of information relating to the prevention of conception, and articles, instruments, substances, drugs and medicines designed adapted or intended for the prevention of conception. (1) by any physician legally licensed to practice medicine or by his direction or prescription. (2) by any medical college legally chartered under the laws of any state, territory or the District of Columbia. (3) by any druggist in filling any prescription of a licensed physician or (4) by any hospital or clinic licensed in any state, territory or the District of Columbia. S 1944 introduced by Senator Copeland, New York, and H R 6110 introduced by Representative Sirovich, New York, propose to prevent the manufacture, shipment and sale of adulterated or misbranded food, drugs and cosmetics to regulate traffic therein and to prevent the false advertisement of food, drugs and cosmetics. H R 5851, introduced by Representative Miller, Arkansas, H R 5883 introduced by Representative Glover, Arkansas, and H R 5906, introduced by Representative Eltse, California, propose to amend the Economy Act so as to provide increased pensions for veterans. H R 5926 introduced by Representative Dingell, Michigan, proposes to amend the Reconstruction Finance Corporation Act to provide for loans to nonprofit corporations organized for the purpose of operating hospitals and homes for sick, infirm, indigent persons of old age. H R 5967 introduced (by request) by Representative Ludlow, Indiana, proposes to prohibit the counterfeiting of drugs. H R 6111 and H R 6118, introduced by Representative Sirovich, New York, propose to provide for the truthful labeling of drugs.

### FOREIGN

**Prize for Essay on Industrial Accidents**—The International Congress for Industrial Diseases and Accidents has instituted a prize of 1000 Swiss francs for the best essay on the consequences of an industrial accident. The manuscript which may be in German, French, Italian or English, should be sent to the general secretary of the congress, Geneva, before December 1931.

**Society News**—The sixth English-speaking Conference on Maternity and Child Welfare will be held in London July 5-7. Sir George Newman, medical officer of health of Great Britain, will deliver the presidential address. Among subjects to be discussed are scope and advancement of antenatal care, care and protection of illegitimate children and health of the child in relation to environment. For information apply to Miss J. Halford, 117 Piccadilly, London, W. 1.

**Course for Otolaryngologists**—The Association of Lecturers for Medical Post-Graduate Courses in Berlin is sponsoring an intensive graduate course for otolaryngologists in English, at the University of Berlin, July 24-August 4. The number of participants is limited to fifteen as practical work will be emphasized. For all further information apply to the secretary, English section, Dozentenvereinigung für Ärztliche Fortbildung, Berlin, N. W. 7, Robert Kochplatz 7.

**Institute of Hygiene Opened in Calcutta.**—The All-India Institute of Hygiene and Public Health, Calcutta, a gift of the Rockefeller Foundation to the government of India, was opened recently, addresses were made by Sir John Anderson, governor of Bengal, and Lieut. Col Alexander D Stewart, director of the institute. The school will be operated in cooperation with the Calcutta School of Tropical Medicine, where basic subjects will continue to be taught, while the institute deals purely with public health subjects related to Indian requirements. It will later be affiliated with the University of Calcutta, through which a doctorate in public health will be offered. The building, which harmonizes with the school of tropical medicine, has four stories, with facilities for teaching, laboratory work and lectures. A number of rooms will be artificially cooled.

## Government Services

### Army Personals

Major Joseph C. Brethling relieved from duty at Chilkoot Barracks Alaska and assigned at Fort Banks, Mass.  
Major John Wallace, relieved at Walter Reed General Hospital and assigned to the Hawaiian Department.  
Lieut. Col Frederick S. Wright, on completion of present tour of foreign service is assigned at Fitzsimons General Hospital Denver.  
Col Robert H. Pierson was to proceed to his home, Dec. 26 1932 to await retirement, for the convenience of the government.  
Lieut. Harry B. Ditmore, Major William K. Evans, Major Ralph Duffy and Col. Leartus J. Owen having been found incapacitated for active service on account of disability incident thereto their retirement is announced.  
Col Lucius L. Hopwood, Major William E. McCormack, Major Fielding T. Robeson and Col Peter C. Field having been found by an army retiring board incapacitated for active service on account of disability incident thereto their retirement is announced.

### Changes in Veterans' Administration

The following changes in the medical personnel of the Veterans' Administration, among others, were reported in the April issue of the *Medical Bulletin*:

Dr Nathaniel H. Badaines reinstated at Bronx N Y  
Dr Martin L. Black reinstated at Bronx N Y  
Dr Robert H. Christian to regional office Birmingham Ala  
Dr Grover C. Daniel to Veterans Administration Home Los Angeles  
Dr Joseph P. DeRiver reinstated at Bronx N Y  
Dr Wallace A. Gerrie reinstated at Columbia S C  
Dr Silas R. Hosmer to regional office Cincinnati.  
Dr Irving I. Ludwig to Canandaigua N Y  
Dr Charlie M. Mathias to Aspinwall Pa.  
Dr Harry Moskowitz to Bronx N Y  
Dr Gilbert A. Rhodes to Tuscaloosa, Ala  
Dr Harold E. Schwing to Aspinwall Pa.  
Dr Shelton G. Silverburg to Canandaigua N Y  
Dr Robert I. Souther reinstated at Bronx, N Y  
Dr Thaddeus S. Troy to Veterans Administration Home St Petersburg Fla  
Dr Oliver M. Warner to Aspinwall Pa.

### U S Public Health Service

Passed Asst. Surg. (R) Floyd N. Shipp relieved at New London Conn. and assigned at the Marine Hospital Mobile, Ala.  
Surg. (R) Carl B. DeForest, relieved at Mobile and assigned at the U S Coast Guard Academy New London Conn.  
Passed Asst. Surg. Ralph Gregg relieved at Warsaw Poland and assigned at Genoa Italy.  
Passed Asst. Surg. Gregory J. Van Beeck relieved at Genoa Italy and assigned at Ellis Island.  
Passed Asst. Surg. Edwin G. Williams relieved at Liverpool England and assigned at Warsaw Poland.  
Asst. Surg. Austin V. Deibert relieved at New Orleans and assigned at the penitentiary Atlanta Ga.  
Passed Asst. Surg. Erval R. Coffey relieved at Washington D C, and assigned at Seattle to establish headquarters for the purpose of cooperating with the state health department in the enforcement of its rules and regulations.  
Surg. William A. Korn relieved at Port Arthur Texas and assigned to the Marine Hospital San Francisco for duty.  
Surg. Herbert M. Manning relieved at Warsaw Poland and assigned to duty at Washington D C.  
Surg. Octavius M. Spencer relieved at Helena Mont. and assigned at the Marine Hospital Chicago.  
Surg. John W. Tappan, relieved at San Diego on or about June 1 and assigned at El Paso Texas.

### Courses for Flight Surgeons

Beginning with the next training year, the militia bureau will offer a program whereby six medical officers will be given active duty training at the School of Aviation Medicine. Two six weeks courses will be conducted, one beginning October 15 one March 1, each year. Aptitude for service will be of foremost consideration in the selection of the officers to take the course.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

May 27, 1933

### The Resignation of Sir Arthur Keith

After twenty-five years' work as conservator of the Museum of the Royal College of Surgeons and as hunterian lecturer, Sir Arthur Keith, who is 67 and has been in poor health, is about to resign. To all who know the college the loss will be considered irreparable. A specialist in many subjects—anatomist, physiologist, pathologist, anthropologist—he has, perhaps for this reason, none of the specialist's narrow outlook. Indeed, the delight of his teaching is the philosophic breadth with which he views every subject. The museum of the college has the greatest collection in the world illustrating the phenomena of life, in both health and disease, and is an expansion of the famous collection of John Hunter. His work and teaching are so much in evidence that the college might be described as a temple devoted to his memory. To no living man can the great adjective hunterian be applied with the same force as to Keith. Indeed, in this age of specialists he may be described as the last of the hunterians. All who have heard him lecture will recall how he loved to show that some recent advance had been foreshadowed in Hunter's teaching even the doctrine of evolution. Evolutionist is the word that best sums up Keith who has said that if he had to edit "The Origin of Species" he would find nothing to erase but much new evidence to add. His teaching is permeated with evolution.

But Keith is not severing his connection with the college. He will have charge of the two laboratories of the college recently built at Downe, in Kent, where Charles Darwin lived. They are endowed by Sir Buckstone Browne, a retired genito-urinary surgeon and are for experimental work in surgery. Keith will supervise the work of the young surgeons who will live and work in Downe.

### Assistance for Professors Displaced in Germany

An organization called the Academic Assistance Council is being formed to assist teachers and investigators who "on the grounds of religion, political opinion or race are unable to carry on their work in their own country." An appeal issued to all "concerned for academic freedom and the security of learning" states that eminent scholars, men of science and university teachers are being compelled to relinquish their posts in German universities. Outside help for more than a small fraction of teachers now likely to be condemned to want and idleness, will depend on the existence of large funds specially devoted to the purpose. Some organization will be needed to act as a center of information and put the teachers concerned into touch with the institutions that can best help them. A provisional council has been formed for these purposes, which will cooperate with similar organizations now being formed in other countries. Means are asked to prevent the waste of exceptional ability. It is pointed out that the issue raised is not a Jewish one alone, many who have suffered have no Jewish connection. The Royal Society has placed accommodation at the disposal of the council. Sir William Beveridge and Prof. C. S. Gibson are acting as honorary secretaries. The appeal is signed by the most eminent British scientists, such as Lord Raveleigh, Lord Rutherford, Sir J. J. Thompson and Sir William Bragg. The scientific side of the medical profession is represented by Professors J. S. Haldane, Sir Gowland Hopkins, Sir Charles S. Sherrington, A. V. Hill, G. Elliot Smith and Major Greenwood. The names are given of 164 teachers named in German newspapers as having been given leave of absence, been dismissed or having resigned as a protest against other dismissals or action of students between

April 4 and May 15. The list is confined to institutions of a university character and includes professors and privatdozenten but not assistants engaged in research work. The great bulk of the persons named are professors. It is known that the list is incomplete but it has been thought best to rely only on statements that have become public in Germany and so far have not been contradicted.

#### International Pediatric Conference

The third International Pediatric Conference will be held in London at the House of the British Medical Association, July 20, 21 and 22, under the presidency of Prof. G. F. Still. The congress will be opened by the Duke and Duchess of York who will welcome the members in the great hall of University College. The subjects for general discussion include the nature of allergy and the prophylaxis of milk-borne diseases. Nominations are invited from the secretaries of the various national committees for delegates to take part in these discussions and to contribute independent papers. Membership in the conference is open to all members of a recognized medical society, but they must be nominated by their own national committee. The subscription for members is \$10 and for nonmedical persons accompanying members \$5 payable in advance to Dr. James H. Thursfield, 84 Wimpole Street, London W. 1. A demonstration of patients from all the children's clinics in London will be given at the Hospital for Sick Children, Great Ormond Street. The secretary is Dr. Leonard Findlay, 61 Harley Street, London, W. 1.

#### PARIS

(From Our Regular Correspondent)

May 10, 1933

#### Controversy Concerning the Nature of Bacteriophage

The discovery of d'Herelle concerning the existence of filtrable and living viruses that develop in bacterial cultures and are capable of producing bacteriolysis has always been the subject of controversies at the Institut Pasteur de Paris, where d'Herelle made his discovery. The chemical results are incontestable, but d'Herelle regards this lysing principle as a living micro-organism, which he calls 'bacteriophage,' and supports his view on the fact that this principle can be cultivated indefinitely by transplanting in nutritive mediums and on the added fact that it is destroyed by heat. Innumerable observations have shown that the bacteriophage of the staphylococcus, when injected into the lesions of furuncles or anthrax, renders the pus sterile. The bacteriophage of cholera, when implanted in India in the wells of infected regions, has promptly arrested epidemics. Nevertheless, Professors Roux and Calmette, the directors of the Institut Pasteur de Paris, have always questioned the living nature of the bacteriophage. That is why d'Herelle, who is of Canadian origin, left the Institut Pasteur, a few years ago and went to Brussels at first to work with Bordet and later to Alexandria where the government put him in charge of the laboratory of the sanitary services and sent him on a mission to the Indies. A new fact has been developed that appears to justify the opinion of the Institut Pasteur. Mr. Calmette has recently presented to the Academy of Sciences the results of research by Noel Bernard and Guillemin who have found, in cultures of the cholera vibrio, a precipitable diastase that has the power of rapidly lysing the vibrio. This diastase, which may be destroyed by heat, acts in infinitesimal doses and makes indefinitely active the tubes of physiologic solution of sodium chloride into which it is successively introduced as in the transplantations of a bacterial culture. It appears, therefore, to undergo a development, an observation that is new in the history of ferments and that is fraught with great consequences in biology. Further research is necessary, but, from present indications, Mr. Calmette thinks

that he is justified in concluding that the bacteriophage, as he has always suspected, is a myth.

#### Neutralizing Properties of Blood Serum of Adults Toward Poliomyelitis Virus

Netter, Levaditi and Hornus have contributed research on the neutralization of the virus of poliomyelitis by the blood serum of adults who have lived with patients with poliomyelitis. During the epidemic, two years ago, in Alsace, which spread over the eastern provinces of France, Levaditi was delegated by the minister of public health to make an extensive inquiry. He conceived the idea that possibly the physicians and nurses might be playing the part of germ carriers, for poliomyelitis appeared in homes soon after they had been present because of other diseases. These germ carriers were immunized without knowing it. It was assumed that they had probably suffered an attack of the virus, which passed unobserved but which was sufficient to immunize them. It was shown that their blood serum was capable of neutralizing the virus or of making it harmless when injected into apes. Finally, it was found that this blood serum could be administered to sick patients with the same curative effects that the blood serum of convalescents from the disease was found to possess. Netter and Levaditi have announced to the Academy of Medicine that they tested the neutralizing power of the blood serum of fifteen normal adults residing where poliomyelitis had been present. This power was found in ten cases to be complete, in one case marked in two cases perceptible, and in two cases nil. Mr. Netter considers it probable that the presence of neutralizing substances in the blood should be attributed to a previous infection that passed unobserved. As the neutralizing power varies in different serums, it is advisable to mix several serums. They found that a mixture of the serum of three persons from Paris who had had no contacts with poliomyelitis patients neutralized the virus at the same dilution as the mixture of three persons residing in Le Mans who had had prolonged contacts with poliomyelitis patients. Netter adds that it is advisable to determine in advance the neutralizing power of the serum of professional donors of blood for transfusion, so as to be in a position to secure at once from them serum that would be active against poliomyelitis, in case of an emergency.

#### BERLIN

(From Our Regular Correspondent)

May 22, 1933

#### The Surgical Congress

The fifty-seventh annual session of the Deutsche Gesellschaft für Chirurgie was held as usual in Berlin, immediately after Easter. The opening address was delivered by the president, Prof. W. Roepke, director of the Wuppertal-Barmen Municipal Hospital, who referred to the national celebration and took a strong stand against the breaking up of medicine into an undue number of specialties. He said that for the progress of surgery it was indispensable to protect it against further splitting off of specialties, since only the surgeon with knowledge of the manifold connections and relationships between the organs of the body could be an exponent of real surgery. Such branches as orthopedics and the treatment of accidents should not be separated from general surgery. He pointed out what had been accomplished in recent years in the various fields of surgery. Surgery of the extremities, which, because of the increase in accidents, made increasing demands on surgical skill, must be placed in the foreground of surgical instruction. In the treatment of injured persons, the psychic rehabilitation of the patient so that he may resume his place in the world must receive consideration.

#### OPERATIVE SHOCK

Rehn, ordinarius at the University of Freiburg, presented a comprehensive paper on "Operative Shock." A distinction must

be made between a purely psychic and injury shock, and shock due to operations. The severe psychic disturbances that formerly resulted from surgical interventions have been almost eliminated through the improvements in the administration of anesthetics. It is now regarded as one of the chief tasks of preparation for an operation to provide all possible means for the prevention of psychic shock. Operative shock affects solely the vegetative system, which, as a result of the anesthesia, is much reduced in its susceptibility. Nevertheless, owing to vagus irritation, excitation in the coronary vessels may develop. The principal effects concern no doubt the central nervous system and the vascular system. Operative shock varies with the site of the operation. A deeper biologic insight into the connections between these events will make a better surgical performance possible. Hence, a precise understanding of the susceptibility to shock is important. This susceptibility expresses itself to a greater extent as circulatory disturbance than as collapse. The conditions designated by Rössle as allergic disturbances play a special role in this connection. But the formation of histamine has nothing to do with operative shock as such. It is more likely that the collection of large quantities of blood in the damaged musculature plays a role. Every successful operation constitutes a performance of the body. The decrease in the circulatory volume of the blood and the diminution of the minute volume are in direct relation to the effort put forth by the body and to the volume of work forced on it by the operation. The keeping of both in an optimal condition requires a commensurate preparation for the operation.

During the discussion, Rehn's assistant, von Brandis, called attention to the results of his research as showing the practical importance of the influence of anesthetics on the effects of remedies used to control the circulation. Frequently the circulation is damaged by the operative shock and hence is more likely to need active support. The discovery of the reduced action of these remedies as a result of anesthesia is of especial importance for the surgeon because he is inclined to have too much confidence in the effectiveness of long recognized remedies for the circulation or to prescribe them in too small amounts or too weak concentrations. Special attention was called to the favorable postoperative action of papaverine on the peripheral arterial circulation for the relief of spasm and consequent disappearance of cyanosis. Klapp, surgeon, of Marburg, combats fat embolism in a drastic manner by standing his patients on the head and thus causing a migration of the fat emboli into the harmless periphery.

Professor Gauss of Würzburg emphasized that the dangers arising from the explosion of anesthetics are greater than is generally known. In using the ordinary large apparatus for the administration of anesthetics, electrical charges up to 5,000 volts quickly develop and a short circuit may be caused by a mere touch. This danger can be avoided with certainty by seeing to it that all apparatus is properly grounded.

As is the custom the congress set apart an evening for the presentation of photographs, at which time Henschen of Basel displayed his roentgenospectroscopic researches on diseased bones and on callus. Hintze of Berlin gave film presentations of healed cases of cancer of the mucosa and the internal organs, derived from the extensive material of the Bier clinic.

The second topic, "Internal Injuries of the Knee Joint," was presented by Bircher of Aarau, who brought out the interesting fact that the reconstruction of a healthy knee joint in men of the plains and in men of the highlands shows essential differences. He gave the results of his observations in 1,000 knee joint operations. The results of the substitution of kangaroo tendons for lacerated crucial ligaments were excellent.

The second day of the congress was devoted to the treatment of fractures. Magnus, the director of the large Miners' Hospital in Bochum, offered a communication on "The Indications and Contraindications in the Treatment of Fractures." In

1932, 4,500 fractures were treated in his hospital. With the aid of photographs, Magnus showed the results that he had secured with simple equipment, since general practitioners and small hospitals do not have at their disposal the apparatus found in large hospitals. In his environment it is desirable also to get along with as simple procedures as possible, in order that imposing methods may not increase immoderately the patient's consciousness of being a patient. Hence, the more simple the method, the better the treatment. Numerous details in the treatment of fractures were discussed on the basis of wide experience. Magnus does not favor the suggestion that persons injured in accidents should be treated in special hospitals for such cases. A better plan would be to provide, by means of continuation courses such instruction as would make all physicians familiar with the most suitable simple methods.

#### OPERATIVE TREATMENT FOR CANCER

"Criteria for the Operative Treatment of Cancer" was the topic selected by Prof. F. König, surgeon, of Würzburg. He emphasized that, owing to a publicity campaign, the view had been spread that operations for cancer were almost never successful and had no particular value. He cited statistics from hospitals in southern Germany to prove that the number of cured cancer patients runs up into the hundreds and that not only five years has passed without recurrence since the operation but in many cases, even ten, twenty and more years. These statistics deal, in part, with especially malignant tumors. In contrast with a recent book by Liek, König said there is no doubt that surgical treatment of cancer, in combination with irradiation, produces much better results than Liek is willing to admit. He urged that every operable cancer be subjected without fail to surgical treatment. The only exception would be cutaneous and mucosal cancers, provided they are easily accessible. Schmieden of Frankfurt-on-Main likewise held this view as representing the uniform opinion of German surgeons. Schönbauer of Vienna, who recommended the use of the electric knife for biopsies, took the same stand.

The papers on "The Surgery of Accidents" were introduced by far reaching statements by Lexer of Munich, who said that the task of the surgeon does not consist merely in eliminating the injury, a much more important task is to restore completely the working capacity of the injured person, and for that purpose psychic supervision is imperative. Such supervision cannot be successfully exercised by any one other than the physician, and the best person for the task is the surgeon who performed the operation, because the patient has learned to trust him. Measures introduced with that in view have been successful at the university clinic of which Lexer is the director.

"The Catgut Problem" was elaborated by Konrich of Berlin and Zeissler of Altona. In parallel investigations, many thousand meters of catgut from various German and foreign pharmaceutical houses were examined. The results were not absolutely satisfactory, so that, in collaboration with the federal bureau of health, the Deutsche Gesellschaft für Chirurgie and the catgut industry, a center for the examination of catgut is to be created, which will study the problem of the production of sterile catgut.

Professor Kirschner of Tübingen was chosen president of the society for the 1934 session.

#### Unauthorized Traffic in Drugs

For decades, the German reich has had regulations governing the traffic in drugs and medicaments. In a recent circular letter from the Prussian minister of the interior it is said that the dispensing of drugs and medicines outside of the pharmacies has increased to an alarming extent. It has even been observed that remedies that are "subject to prescription" are sometimes sold over the counter in shops handling mis-

cellaneous articles. The ministry of the interior has therefore issued instructions to the authorities to take drastic action to check this unauthorized traffic in drugs.

## BELGIUM

(From Our Regular Correspondent)

May 13, 1933

### Treatment of Cancer of the Cervix

Addressing recently the Societe belge de chirurgie Delporte, Cahen and Sluys gave a clear account of the present status of the treatment of cancer of the cervix uteri. They show that there are differences of opinion, owing to the fact that the classification of cases as proposed by the cancer commission of the League of Nations has only a relative character. The personal factor plays a great part in the estimation of operability. The operative statistics are also sometimes purposely distorted.

The Wertheim operation has given remarkable results, but it is applicable to only a small number of cases. The inoperable cases are numerous and depend much on the person who makes the selection. The operative results likewise vary. The operation has a high mortality, although it has been diminished, especially since the use of Mikulicz drainage. The results from current practice are, however, much less brilliant than some published statistics would indicate.

The technic of the application of curietherapy is simple, whereas the Wertheim operation requires long experience. The results are better than with the Wertheim operation for one obtains 45 per cent of recoveries at the end of five years. Curitherapy has one disadvantage: the operator cannot so carefully treat the glands, and it sometimes happens that a recurrence develops.

That is why the authors supplement curietherapy with a Wertheim operation, which is performed from two to three months later. The operation is then performed without difficulty. Among fifty-three cases in which they operated under these conditions, the authors had three deaths, one due to embolism on the third day, and the two others due to generalized peritonitis. In nine of the specimens of tissue removed cancer cells were found, enveloped in fibrous tissue. Fifteen of the fifty-three patients operated on had glands containing cancer cells.

They reported also the results secured by means of curietherapy during the previous ten years. They applied this treatment in 437 cases without taking account of operability. The treatment was applied in two stages, a vaginal application being followed by an intra uterine application after dilation. In some patients the treatment was supplemented by intra-abdominal applications. They reported eighty recoveries out of 327 cases (26 per cent), after an interval of five years. The recurrences took the form of a progressive invasion of the pelvis which shows that the action of the rays on the glands had been inadequate.

### Rapid Transportation of Patients

Toward the end of 1932, the Red Cross Society of Belgium organized in Belgium twenty-seven centers of sanitary transportation. Thirty-nine vehicles have been constantly in service and more than 10,000 sick and injured persons have had the benefits of this service. The transport centers are located so that no town is more than twenty-five miles distant from a center. This system fulfils perfectly its essential purpose of giving to patients first aid on the spot and of transporting them immediately and under the best conditions to a hospital center.

### Eradication of Mosquito Larvae at Elisabethville

The Societe belge de medecine tropicale has published a report on the activity of its sanitary crew in Elisabethville during the first six months of its existence. The crew removed 28,043 empty receptacles (tin cans and the like) from the city and the

environs. 3,084 hatching places of mosquitoes were destroyed. In general, the European quarters of the city are less sanitary than the native quarters, and the servants of the Europeans are responsible for these conditions. The report emphasizes the need of cleaning up the neutral zone between the European and the native quarters.

## VIENNA

(From Our Regular Correspondent)

May 10, 1933

### The First Necropsies in Vienna

During a lecture recently delivered at the Historisches Seminar of the University of Vienna it was recalled that the first necropsy on a human body performed in accordance with scientific principles, within the area of German countries, occurred in Vienna in 1404. From Lower Italy, where every five years one necropsy on a human body was permitted by law, the art of anatomy spread through Upper Italy into Germany. Galeazzo de Sophia, a physician of Padua, brought this art to Vienna, where, on Feb. 12, 1404, in the presence of "doctors and scholars" of the medical faculty and of "surgeons and apothecaries," he performed a necropsy. The second dissection took place in 1418, and lasted from February 21 to February 28. After completion of the dissection, the bishop held a solemn mass for the soul of the deceased. In 1435, the students of medicine demanded that a public "anatomy" should be again undertaken during the winter semester and that henceforth a human body (alternately a male and a female body) should be dissected every year. The faculty accepted this suggestion and a committee of two doctors and two students was appointed in March, 1436, to make the arrangements. Dr. Johannes Eigel was chosen to serve as "demonstrator." But the corpse could not be secured. Four years later the students renewed their demand, and again the faculty complied but stipulated that only doctors and scholars would be permitted to be present. To secure a body, a petition was sent to the mayor and to the judge of the municipal court of Vienna requesting that the body of a criminal who was soon to be hanged should be placed at the disposal of the medical faculty, after execution of the sentence. The request was granted. But when the body of the hanged criminal was turned over to the students and dissection begun, the supposedly dead man showed signs of life. The circumstance caused so much excitement that the dissection did not take place. Not until four years later was the desire of the students fulfilled. The records of the fifteenth century reveal only two other necropsies performed in Vienna, one in 1452 and one in 1459, or a total of five. In the next century, however, more frequent opportunities to study the structure of the body by means of necropsies were afforded.

### Pathogenesis of Acute Disorders of the Pancreas

Research at the Chirurgische Klinik of the University of Vienna on a large number of patients, concerning which Dr. H. L. Popper reported recently before the Gesellschaft der Aerzte, yielded data on the pathogenesis of acute pancreatitis which in recent years has become prevalent. A distinction is still made between pancreatitis and pancreatic necrosis. The former is regarded as a bacterial disorder, whereas the necrosis is interpreted as a result of an activation by trypsin, which is brought about by the flow of bile into the pancreas.

In 200 gallbladders that came to operation, increased ferment values were found on examination to be present in the bile having been produced by the penetration of pancreatic fluid from the pancreatic duct into the common bile duct. Further observations showed that in the majority of cases of acute pancreatic disorders such an influx of pancreatic fluid actually occurs. There develops in the biliary passages a primary

trypsin activation, and this is carried into the pancreas from the distal portion of the choledochus within the pancreas. Whereas normally the flow of pancreatic fluid into the biliary passages takes place without further incident, since the mixture rapidly flows out again, in the event of disturbances of the outflow at Vater's papilla there occurs an intensive interaction of bile and pancreatic fluid on each other and a marked action on the adjacent tissues. The disturbance of the outflow is caused usually by stone but occasionally also by spastic conditions affecting Oddi's sphincter. This conception of the origin of acute pancreatic disorders corresponds to the measurements of the pressure in the pancreatic and the bile ducts and is doubtless correct for the majority of cases—also for the majority of postoperative cases of pancreatitis. In the possibility of communication between the choledochus and the pancreatic duct lies the factor that predisposes to pancreatitis. Dr Popper rejects an etiologic separation of pancreatitis and pancreatic necrosis. He thinks that the prevailing condition of the pancreatic secretion is the most important factor determining the type of disorder that arises. It is his opinion also that experimentation on animals is not conclusive for the judging of such conditions. Direct observation on man is required for the reason that in animals the conditions about the mouth of the pancreas are entirely different from those found in man.

#### Eosinophilia in the Child

In the *Medicinisches Seminar*, Dr Lehnendorff discussed recently eosinophilia in the child. He emphasized that this condition in itself justified no far-reaching conclusions. The most important thing is a careful clinical examination of the patient, but the discovery of an eosinophilia contributes, to be sure, much toward the clarification of the case. It is known that the spleen regulates in some manner, possibly by means of hormones, the production and distribution of acidophil cells in the blood. It may also be stated with certainty that the eosinophils constitute an excellent reagent in the child for infections and intoxications, as they disappear from the blood when the infections appear. Reappearance of the eosinophils may be regarded as a favorable prognostic sign. This 'post-infectious eosinophilia' amounts usually only to from 5 to 8 per cent, but it is diagnostically and prognostically very significant. For example, it announces the approaching lysis and cure of pneumonia, even though the infiltration symptoms are still intensive. Conversely, absence of eosinophilia after the drop in temperature justifies the suspicion that it was only a pseudocrisis. The prognostically favorable significance of eosinophilia holds good in all infectious processes such as sepsis, suppurations and osteomyelitis. Also in chronic diseases such as tuberculosis, it is valuable. If, in the presence of acute exanthems, there is some uncertainty as to whether rubella, scarlet fever or a scarlatiniform exanthem is involved, eosinophilia will decide in favor of scarlet fever. The phenomenon is here sharply marked. Also in allergic disorders it appears distinctly in asthma, hay fever, urticaria, migraine and idiosyncrasy of various kinds. But also a number of medicaments, such as digitalis, produce occasionally considerable eosinophilia. In the frequent severe abdominal conditions, which in childhood so often cause the examiner to suspect appendicitis or peritonitis, the acidophils point away from an inflammatory genesis. Since all worm disorders are associated with eosinophilia (*Oxyuris*, *Ascaris*, *Trichomonas* moderately, *Echinococcus* much more so, but especially *Trichinella*—50 per cent or more), such a condition must be suspected in dealing with children. Also prurigo pemphigus, herpes-dermatitis and itching eczemas, likewise all forms of medicine dermatitis as well as lymphogranulomatosis show higher values of eosinophilia. Abnormally high values (from 30 to 90 per cent) are found in the condition designated splenomegalia with persistent eosinophilia' with a very large hard spleen also after

a liver diet, particularly after the ingestion of raw liver but not after liver extracts. It is not found until from three to six weeks after the beginning of the liver diet. It is not characteristic for pernicious anemia but arises in every anemia, also in absolutely healthy persons if they follow a liver diet long enough, and attains fairly high values 60 per cent or more. This 'alimentary eosinophilia' may cause diagnostic errors, if the examiner loses sight of it.

#### A New Cancer Hospital in Vienna

Vienna possesses at present only one institute that deals exclusively with research and treatment of cancer. The hospital owes its existence to a generous gift of an American philanthropist who, in gratitude for his recovery from a grave disease, supplied his Vienna physician with the funds for this institute. But recently, at the annual session of the Oesterreichische Gesellschaft für Krebsforschung, Professor Eiselsberg announced that another American has made a large gift to be used for the erection of a second cancer hospital in Vienna. The institute will begin its work by the end of June this year. Prof. Dr Freund, who by his researches in this field has achieved international fame (the Freund-Kaminer reaction, the Freund diet), will become the director of the new hospital and is planning to test thoroughly the dietetic treatment of cancer disease. The new hospital will have twenty beds, together with the necessary laboratories and operating rooms. It is designed for patients of moderate means, the charges being the same as in all the public hospitals of Vienna.

Through the cooperation of the ministry of health, the sanitary department of the city of Vienna and the Gesellschaft für Krebsforschung und Bekämpfung, a census of all tumor patients in Vienna is contemplated, in order that a system of aid may be worked out. A beginning of a system of aid for cancer patients in Vienna has already been made through the creation of the excellent radium department in the Vienna Municipal Hospital where the surgical department has reserved sixty beds for the application of ray treatment in cancer, and where the records of all known cancer cases, their postoperative course and their precise control are thoroughly organized.

#### Surgical Treatment of Syringomyelia

The treatment of syringomyelia proposed by Poussep in 1927, which consisted in an attempt to relieve the spinal cord by an operative opening of the intramedullary cavities, has been tested in about fifty cases of syringomyelia. The results cannot be regarded as perfectly satisfactory, since the time has been too short and the number of cases too small. The assumption that the cavities in the spinal cord exert a pressure on the cord does not appear to be justified in all cases, as Professor Denk stated recently in an address before the Gesellschaft der Wiener Aerzte. He brought out that frequently one finds cavities without much rigid tension. Nevertheless, when these cavities were opened nearly always a marked improvement of the clinical symptoms followed. Professor Denk discussed the technic of the operation. The spinal cord is split longitudinally in the region of the cavity formation for a distance of from 1 to 3 cm, so that the content of the cavity is evacuated and can continue to escape through the incision. For the incision a spot in which the fluid is near the surface should be chosen. The dura and the soft parts are then sutured. How long the incision remains open is not yet known exactly. In one case, which resulted fatally four weeks after the operation, the wound was still open. Some German authors who have reported good operative results have emphasized that the wounds in the spinal cord apparently do not close. Professor Denk presented two cases, a man aged 47 and a man aged 54 in whom all previously known methods of treatment, including roentgen rays, had been fruitless. Incision of the spinal cord so far as the short period of observa-

tion permits an opinion at least checked the process if it did not cure the disorder. Soon after the operation (from six to ten days) a distinct diminution of the associated pain and spastic paresis was evident. It must be admitted, however, as was emphasized during the discussion, that likewise roentgen irradiations of such processes not infrequently bring about a marked retrogression of the subjective symptoms. In syringomyelia, young tissue that is highly sensitive to irradiation is involved for the most part especially the endothelium of the capillaries is damaged and thus the production of immoderate fluid is checked. If roentgen therapy proves ineffective an operation is in order and in many cases can be expected to yield fairly good results.

#### MADRID

(From Our Regular Correspondent)

May 3, 1933

#### International Congress of Ophthalmology

The fourteenth International Congress of Ophthalmology was held April 16-22 at Madrid with more than 2000 ophthalmologists from several countries in attendance. The president of the republic and the most prominent members of the government attended and delivered speeches. The official topics were tuberculosis of the iris and of the ciliary body and detachment of the retina. Following are abstracts of the discussions.

Dr E. V. L. Brown of Chicago said that the treatment of tuberculous iridocyclitis is not satisfactory from either the theoretical or the practical point of view. Roentgen therapy and the introduction of the patient's own blood into the anterior chamber of the eye, which have been considered the most effective treatment, fail to prevent recurrences and the appearance of the disease in the normal eye and they have no influence on the primary seat of the tuberculosis in the thorax. Exactly the same unsatisfactory results are observed with tuberculin therapy. The speaker recommended fresh air, rest and proper diet in order to improve the general condition of the patient as coadjuvant measures.

Dr Josef Igersheimer of Frankfurt-on-Main spoke on the pathologic anatomy of tuberculosis of the iris and of the ciliary body. He said that in some cases the tissues do not undergo a specific histologic reaction to the tubercle bacillus. He classified the clinical forms of tuberculosis of the iris and of the ciliary body into two groups. The first group is divided into two subgroups. The first subgroup, which includes the acute and subacute cases, is made up of certain forms of iridociliary tuberculosis characterized by the presence of either large or small nodules. The second subgroup, which includes the chronic cases, is made up of transitional forms with tuberculous lesions in the bulb without lesions in the uveal tract, forms with a suspected tuberculous structure of the uveal tract, forms of clinical tuberculosis of the uveal tract without specific histologic lesions, and forms with chronic inflammation of the uveal tract in which neither clinical nor anatomic signs of certainty of tuberculosis exist. The second group is made up of the forms in which the predominant symptom is either necrosis or diffuse suppuration. The more sensitized the tissues are, the more frequent the development of hypopyon, of caseation and of perforation of the bulb. These violent reactions are frequently observed in children. The conditions of immunity are important in the understanding of these forms, but at present and having only the results of the tuberculin reactions to go by, it is not possible to draw conclusions on the sensitization of the iridociliary tissues.

Dr H. Lagrange of Paris spoke on the differential diagnosis of tuberculosis of the iris and of the ciliary body. There are several clinical forms of exudative tuberculosis of the iris and of the ciliary body. The diagnosis of tuberculosis of the iris and of the ciliary body is difficult, especially when certain forms of iritis or iridocyclitis are present. The differential

diagnosis is made between tuberculosis, focal infection and syphilis. In cases in which neither a syphilitic etiology nor the presence of a focal infection can be proved, a diagnosis of tuberculosis is probably correct. It is a diagnosis of probability because there are no specific clinical signs to prove the presence of tuberculosis, except for the tuberculin test, which is still the most useful diagnostic method. The local prognosis of this type of tuberculosis is serious in the grave forms. Certain forms of fibrous tuberculosis associated with fibrous manifestations of general tuberculosis may present local and general variations, parallel to those of allergy.

Dr Arruga of Barcelona spoke on the etiology and pathogenesis of detachment of the retina. Two thirds of the cases occur in males, and bilateral detachment is frequently observed. In a group of 45,000 patients with eye diseases, 682 had retinal detachment and in 121 the lesion was bilateral. Myopia existed in 50 or 60 per cent of the cases of detachment of the retina. The choroid is torn more frequently than the retina, but it is not detached. Work in which the eyes are used to a great extent has not much influence as a causal factor. Histologic study proves that in most cases of retinal detachment there are atrophic changes with vascular degeneration of the retina. The intra-ocular pressure diminishes shortly after the detachment has occurred. The albumin content of the subretinal fluid increases as the detachment becomes older. It disappears, however, in very old detachments, probably because of the atrophy of the choroid. The specific gravity of this fluid is greater in the older than in the newer cases. Experimentation shows that the tearing of the retina either retards or prevents the reapplication of the detached retina. The theory of the choroidal exudation holds true in the pathogenesis of detachment of the retina in those cases in which the detachment is due to nephritic retinitis, exudative choroiditis and orbital diseases. When the detachment is caused by exudation, the retina may reapply itself if the exudates are reabsorbed. This is what happens in cases of retinitis complicating pregnancy. The theory of the retraction of the vitreous body seems logical when there are either vitreous hemorrhages or loss of the vitreous humor, because, during their reabsorption, retractile and cicatricial adhesions are formed. This theory, however, loses a great part of its value if one considers the absence of retinal detachment in the aged, following removal of a cataract or of the vitreous body, by Zur Nedden's method. The reapplication of the retina to the superior part of the detachment in cases in which a superior detachment becomes an inferior one shows also the lack of truthfulness of the theory of the retraction of the vitreous body. Dr Arruga believes that idiopathic detachment of the retina is due in most cases to a lesion in the retina itself. If the retina is normal and healthy it is not easily detached, even if it is torn. In the production of retinal detachment there are several factors involved that is, an energetic action of the vitreous body and the choroid, and some special condition in the retina itself. Experiments have shown that in order to cause detachment it is necessary to provoke large tears in the retina, a total withdrawal of the vitreous humor or an intense irritation of the choroid, and even in these conditions the detachment may be cured. The numerous retinal changes in the aged which are invisible in ophthalmologic examinations, as well as certain types of iridocyclitis which cannot be seen by direct examination of the eye but which can be discovered by the slit lamp may be made worse by the operation. Some nutritional disturbances and deficiencies of the liver and kidneys have an unfavorable action on the retina. Hypotension is due to the reabsorption of the vitreous humor by the choroid. It may be modified by psychic or moral disturbances and it favors detachment. Sclerosis of the retina favors detachment also in cases of small retinal tears. The form of the tear depends on the presence of adhesions between the

vitreous body, the retina and the choroid. The greater specific gravity of the subretinal fluid explains the progress of the detachment in a downward direction. It also justifies the position in which the patient is kept after the operation, that is, on the side on which the operation was performed.

Dr Giuseppe Ovio of Rome spoke on the history of the treatment of detachment of the retina. When the real pathology of the condition was still unknown, it was considered as a form of amaurosis in the correction of which medical treatment was resorted to. Ware proposed the puncture of the sclerotic coat to evacuate the subretinal fluid. Samelsohn in 1875 advised the application of a bandage causing compression in the eye while the patient was lying in dorsal decubitus. Nowadays, medical treatment is used according to Samelsohn's precepts. Besides that, several other measures such as having the patient in the dark, diaphoresis, the instillation of physostigmine and atropine, electrolysis, massage, the administration of iodine, mercurial and arsenical preparations, tuberculin therapy, a diet with little salt, and subconjunctival or intravitreal injections are used. The subconjunctival injections were recommended by Grossmann in 1883 although they became more widely used through the experiments of Mellinger in 1894. The foregoing measures are all based on logical conceptions. During the last half of a century there have been optimistic and pessimistic tides. Statistics presented by the author show that, under medical treatment, improvement occurs in 22 per cent of the cases and recovery in 22 per cent.

Dr Alfred Vogt of Zurich spoke on surgical treatment of detachment of the retina. Rest is such an important factor in treatment that alone it may accomplish the cure. The aim of surgical treatment of detachment of the retina is to close the tear. Galezowski was the first to perform systematic thermocauterization of the retinal tear as a treatment for detachment of the retina. Retinal perforation may be of traumatic origin. The so called spontaneous perforation of the retina may be favored by trauma in the presence of destructive processes of the retina, such as senile and presenile degeneration, myopic atrophy and cystic degeneration. The destruction of the vitreous humor parallels that of the retina. The spontaneous detachment is caused by either a tearing or a perforation. The hypotonia coexisting with the detachment is the result of the perforation and it disappears when the perforation is closed. To succeed in closing the perforation it is necessary to locate its origin, which may be done by ophthalmoscopic examination. Cauterization by using the apparatus of Gonin, electrocauterization, the chemical method of Guist, and diathermy according to the technic of Weve are the most important operative methods in use. The most simple method is ignipuncture by cautery and diathermy needle, which prevents loss of the vitreous humor. Cauterization with the needle should be exceedingly rapid (from one to three seconds). Otherwise serious injury may result. The author advised the use of the needle of Weve in cases of small perforations located near the choroid and the use of the galvanocautery in cases of extensive perforations near the ora serrata. Generally, two cauterizations are necessary to cure an extensive tear.

Trachoma and blindness were also discussed during the congress. Dr Wibaut of Amsterdam said that in 1931 an inquiry in which a great number of ophthalmologists from several countries took part was opened to study the initial symptoms of trachoma. It was found that in countries where trachoma is endemic the diagnosis is made long before the time of appearance of complications or scars. The difference of opinion among ophthalmologists rests on the fact that some of them consider certain cases as either benign or early forms of trachoma while others regard them as cases of follicular conjunctivitis. Most ophthalmologists, however, consider the early noncomplicated forms of trachoma highly important. These early forms are frequently observed in chil-

dren of preschool and school age. The author advised the systematic examination of children in school, at home and in the kindergarten in order to discover early cases of trachoma. These uncomplicated forms, if properly treated, may exist a long time without complications, even in those countries in which the virulent forms of the disease are not uncommon. The detection and treatment of trachomatous children are important in the campaign against trachoma. Instead of being sent away from school, trachomatous children should be treated in those educational centers.

Dr Riccardo Galeazzi of Rome presented statistical studies demonstrating the possibility of producing in the eye a local immunity by means of a polyvalent vaccine made with bacteria isolated from patients having different kinds of ocular infections. The author believes that trachoma is due to the association of bacteria superposed on a constitutional trachomatous substratum which is identified with adenoidism.

Dr P. K. Olitsky of New York reported the results of his experiments related with the transmission of trachoma from man to monkey. If the normal conjunctiva of monkeys is rubbed with secretions from trachomatous patients, or if monkeys receive a subconjunctival injection of trachomatous tissue of human origin characteristic granular conjunctivitis develops, and the disease may be transmitted from monkey to monkey. The speaker started a series of similar transfers with cultures of *Bacterium granulosis* obtained from human trachomatous material. The period of inoculation of the disease, the transmission of the infection from the inoculated eye to the normal one and the appearance, first, of the initial lesions and, later on, of the well developed lesions, as well as the histopathologic changes, are identical in animals in which the infection is transmitted by cultures and in those in which it is transmitted by infected tissues. The characteristic experimental lesions originate around the vessels, thus proving that the genesis of experimental trachoma is similar to that of human trachoma.

By the superposition of secondary infections in monkeys, following the inoculation with *Bacterium granulosis* it is possible to produce ocular lesions with a clinical aspect similar to that observed in florid trachoma in man. By the intracorneal injection of any agent with slight infective capacity, it is possible to produce in the animal a persistent keratitis similar to panus tenuis in trachoma in man. The active etiologic agent of these lesions is *Bacterium granulosis*. The intracorneal injection of these bacteria provokes the development of pseudopanulcus, which may persist at least for two years without regression of the lesions. The hypothesis that trachoma is a disease caused by an ultramicroscopic virus has not been as yet proved.

Dr Manuel Marquez of Madrid spoke on the necessity of making a rational classification of the causes of blindness and he presented a classification in the form of a chart.

At the closing of the congress a resolution was passed to be presented to the governments of several countries as a reaction of ophthalmologists against the charlatanism of those who sell eyeglasses or adjust them without being ophthalmologists. The congress moved that persons who sell glasses should do so only when they are prescribed by ophthalmologists, the only persons scientifically prepared to know the needs of their patients.

#### Loewenstein's Studies on Tuberculosis

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tion permits an opinion at least checked the process if it did not cure the disorder. Soon after the operation (from six to ten days), a distinct diminution of the associated pain and spastic paresis was evident. It must be admitted however, as was emphasized during the discussion that likewise roentgen irradiations of such processes not infrequently bring about a marked retrogression of the subjective symptoms. In syringomyelia, young tissue that is highly sensitive to irradiation is involved, for the most part especially the endothelium of the capillaries is damaged and thus the production of immoderate fluid is checked. If roentgen therapy proves ineffective an operation is in order and in many cases can be expected to yield fairly good results.

### MADRID

(From Our Regular Correspondent)

May 3 1933

#### International Congress of Ophthalmology

The fourteenth International Congress of Ophthalmology was held April 16-22, at Madrid with more than 2,000 ophthalmologists from several countries in attendance. The president of the republic and the most prominent members of the government attended and delivered speeches. The official topics were tuberculosis of the iris and of the ciliary body and detachment of the retina. Following are abstracts of the discussions.

Dr E. V. L. Brown of Chicago said that the treatment of tuberculous iridocyclitis is not satisfactory from either the theoretical or the practical point of view. Roentgen therapy and the introduction of the patient's own blood into the anterior chamber of the eye which have been considered the most effective treatment, fail to prevent recurrences and the appearance of the disease in the normal eye, and they have no influence on the primary seat of the tuberculosis in the thorax. Exactly the same unsatisfactory results are observed with tuberculin therapy. The speaker recommended fresh air rest and proper diet in order to improve the general condition of the patient, as adjuvant measures.

Dr Josef Igersheimer of Frankfurt-on-Main spoke on the pathologic anatomy of tuberculosis of the iris and of the ciliary body. He said that in some cases the tissues do not undergo a specific histologic reaction to the tubercle bacillus. He classified the clinical forms of tuberculosis of the iris and of the ciliary body into two groups. The first group is divided into two subgroups. The first subgroup, which includes the acute and subacute cases, is made up of certain forms of iridociliary tuberculosis characterized by the presence of either large or small nodules. The second subgroup, which includes the chronic cases, is made up of transitional forms, forms with tuberculous lesions in the bulb without lesions in the uveal tract, forms with a suspected tuberculous structure of the uveal tract forms of clinical tuberculosis of the uveal tract without specific histologic lesions, and forms with chronic inflammation of the uveal tract in which neither clinical nor anatomic signs of certainty of tuberculosis exist. The second group is made up of the forms in which the predominant symptom is either necrosis or diffuse suppuration. The more sensitized the tissues are, the more frequent the development of hypopyon of caseation and of perforation of the bulb. These violent reactions are frequently observed in children. The conditions of immunity are important in the understanding of these forms, but at present and having only the results of the tuberculin reactions to go by, it is not possible to draw conclusions on the sensitization of the iridociliary tissues.

Dr H. Lagrange of Paris spoke on the differential diagnosis of tuberculosis of the iris and of the ciliary body. There are several clinical forms of exudative tuberculosis of the iris and of the ciliary body. The diagnosis of tuberculosis of the iris and of the ciliary body is difficult, especially when certain forms of iritis or iridocyclitis are present. The differential

diagnosis is made between tuberculosis, focal infection and syphilis. In cases in which neither a syphilitic etiology nor the presence of a focal infection can be proved, a diagnosis of tuberculosis is probably correct. It is a diagnosis of probability because there are no specific clinical signs to prove the presence of tuberculosis, except for the tuberculin test, which is still the most useful diagnostic method. The local prognosis of this type of tuberculosis is serious in the grave forms. Certain forms of fibrous tuberculosis associated with fibrous manifestations of general tuberculosis may present local and general variations, parallel to those of allergy.

Dr Arruga of Barcelona spoke on the etiology and pathogenesis of detachment of the retina. Two thirds of the cases occur in males, and bilateral detachment is frequently observed. In a group of 45,000 patients with eye diseases, 682 had retinal detachment and in 121 the lesion was bilateral. Myopia existed in 50 or 60 per cent of the cases of detachment of the retina. The choroid is torn more frequently than the retina, but it is not detached. Work in which the eyes are used to a great extent has not much influence as a causal factor. Histologic study proves that in most cases of retinal detachment there are atrophic changes with vascular degeneration of the retina. The intra-ocular pressure diminishes shortly after the detachment has occurred. The albumin content of the subretinal fluid increases as the detachment becomes older. It disappears, however, in very old detachments, probably because of the atrophy of the choroid. The specific gravity of this fluid is greater in the older than in the newer cases. Experimentation shows that the tearing of the retina either retards or prevents the reapplication of the detached retina. The theory of the choroidal exudation holds true in the pathogenesis of detachment of the retina in those cases in which the detachment is due to nephritic retinitis, exudative choroiditis and orbital diseases. When the detachment is caused by exudation, the retina may reapply itself if the exudates are reabsorbed. This is what happens in cases of retinitis complicating pregnancy. The theory of the retraction of the vitreous body seems logical when there are either vitreous hemorrhages or loss of the vitreous humor, because, during their reabsorption, retractile and cicatricial adhesions are formed. This theory however loses a great part of its value if one considers the absence of retinal detachment in the aged following removal of a cataract or of the vitreous body, by Zur Nedden's method. The reapplication of the retina to the superior part of the detachment in cases in which a superior detachment becomes an inferior one shows also the lack of truthfulness of the theory of the retraction of the vitreous body. Dr Arruga believes that idiopathic detachment of the retina is due in most cases to a lesion in the retina itself. If the retina is normal and healthy it is not easily detached, even if it is torn. In the production of retinal detachment there are several factors involved that is, an energetic action of the vitreous body and the choroid and some special condition in the retina itself. Experiments have shown that in order to cause detachment it is necessary to provoke large tears in the retina, a total withdrawal of the vitreous humor or an intense irritation of the choroid, and even in these conditions the detachment may be cured. The numerous retinal changes in the aged, which are invisible in ophthalmologic examinations, as well as certain types of iridocyclitis which cannot be seen by direct examination of the eye but which can be discovered by the slit lamp may be made worse by the operation. Some nutritional disturbances and deficiencies of the liver and kidneys have an unfavorable action on the retina. Hypotension is due to the reabsorption of the vitreous humor by the choroid. It may be modified by psychic or moral disturbances and it favors detachment. Sclerosis of the retina favors detachment also in cases of small retinal tears. The form of the tear depends on the presence of adhesions between the

vitreous body, the retina and the choroid. The greater specific gravity of the subretinal fluid explains the progress of the detachment in a downward direction. It also justifies the position in which the patient is kept after the operation that is, on the side on which the operation was performed.

Dr Giuseppe Ovio of Rome spoke on the history of the treatment of detachment of the retina. When the real pathology of the condition was still unknown, it was considered as a form of amaurosis in the correction of which medical treatment was resorted to. Ware proposed the puncture of the sclerotic coat to evacuate the subretinal fluid. Samelsohn in 1875 advised the application of a bandage causing compression in the eye while the patient was lying in dorsal decubitus. Nowadays, medical treatment is used according to Samelsohn's precepts. Besides that, several other measures such as having the patient in the dark, diaphoresis, the instillation of physostigmine and atropine, electrolysis, massage, the administration of iodine, mercurial and arsenical preparations, tuberculin therapy, a diet with little salt, and subconjunctival or intravitreal injections are used. The subconjunctival injections were recommended by Grossmann in 1883 although they became more widely used through the experiments of Mellinger in 1894. The foregoing measures are all based on logical conceptions. During the last half of a century there have been optimistic and pessimistic tides. Statistics presented by the author show that, under medical treatment, improvement occurs in 22 per cent of the cases and recovery in 22 per cent.

Dr Alfred Vogt of Zurich spoke on surgical treatment of detachment of the retina. Rest is such an important factor in treatment that alone it may accomplish the cure. The aim of surgical treatment of detachment of the retina is to close the tear. Galezowski was the first to perform systematic thermocauterization of the retinal tear as a treatment for detachment of the retina. Retinal perforation may be of traumatic origin. The so-called spontaneous perforation of the retina may be favored by trauma in the presence of destructive processes of the retina, such as senile and presenile degeneration, myopic atrophy and cystic degeneration. The destruction of the vitreous humor parallels that of the retina. The spontaneous detachment is caused by either a tearing or a perforation. The hypotonia coexisting with the detachment is the result of the perforation and it disappears when the perforation is closed. To succeed in closing the perforation it is necessary to locate its origin, which may be done by ophthalmoscopic examination. Cauterization by using the apparatus of Gonin, electrocauterization, the chemical method of Guist, and diathermy according to the technic of Weve are the most important operative methods in use. The most simple method is ignipuncture by cautery and diathermy needle which prevents loss of the vitreous humor. Cauterization with the needle should be exceedingly rapid (from one to three seconds). Otherwise, serious injury may result. The author advised the use of the needle of Weve in cases of small perforations located near the choroid and the use of the galvanocautery in cases of extensive perforations near the ora serrata. Generally, two cauterizations are necessary to cure an extensive tear.

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dren of preschool and school age. The author advised the systematic examination of children in school, at home and in the kindergarten in order to discover early cases of trachoma. These uncomplicated forms, if properly treated, may exist a long time without complications, even in those countries in which the virulent forms of the disease are not uncommon. The detection and treatment of trachomatous children are important in the campaign against trachoma. Instead of being sent away from school, trachomatous children should be treated in those educational centers.

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Dr P. K. Olitsky of New York reported the results of his experiments related with the transmission of trachoma from man to monkey. If the normal conjunctiva of monkeys is rubbed with secretions from trachomatous patients, or if monkeys receive a subconjunctival injection of trachomatous tissue of human origin characteristic granular conjunctivitis develops, and the disease may be transmitted from monkey to monkey. The speaker started a series of similar transfers with cultures of *Bacterium granulosis* obtained from human trachomatous material. The period of inoculation of the disease, the transmission of the infection from the inoculated eye to the normal one, and the appearance, first, of the initial lesions and, later on of the well developed lesions, as well as the histopathologic changes, are identical in animals in which the infection is transmitted by cultures and in those in which it is transmitted by infected tissues. The characteristic experimental lesions originate around the vessels, thus proving that the genesis of experimental trachoma is similar to that of human trachoma.

By the superposition of secondary infections in monkeys, following the inoculation with *Bacterium granulosis* it is possible to produce ocular lesions with a clinical aspect similar to that observed in florid trachoma in man. By the intracorneal injection of any agent with slight infective capacity, it is possible to produce in the animal a persistent keratitis similar to panus tenuis in trachoma in man. The active etiologic agent of these lesions is *Bacterium granulosis*. The intracorneal injection of these bacteria provokes the development of pseudopanul, which may persist at least for two years without regression of the lesions. The hypothesis that trachoma is a disease caused by an ultramicroscopic virus has not been as yet proved.

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detail his method of culture and stated that he has modified his conception on the etiology of tuberculosis. At first he found tubercle bacilli in the blood of patients with several clinical forms of tuberculosis—pulmonary, renal, cutaneous and osseous. The speaker found, later on, tubercle bacilli in the blood of patients with acute articular rheumatism. Up to July 1, 1932 he had made cultures from 1,430 specimens of blood of patients with acute articular rheumatism, 432 of which gave positive results for tubercle bacilli. Kren reported positive results in 100 per cent of the cases of lupus erythematosus when the disease was in evolution. The speaker, in collaboration with Dr. Karl Amersbach of Prague, made an examination of the tonsils and of the blood of several patients with polyarthritis. They detected tubercle bacilli in the tonsils of twelve patients with polyarthritis, in the blood of eight and in the blood and tonsils of two. The presence of tubercle bacilli in the tonsils and in the blood of polyarthritic patients confirmed the work previously reported by the speaker in collaboration with Reitter. Reitter believes that the presence of tuberculous bacillemia, increased allergy and increased filtration of the vessels, which may be caused either by an infection or by a trauma, are the necessary factors for the development of polyarthritis. Tubercle bacilli are in the blood of patients with chorea only during the early periods of the disease. The diagnosis of tuberculosis must be made from the fact that tubercle bacilli exist in the blood and not on the basis of characteristic tuberculous lesions in the tissues. The detection of tubercle bacilli in the blood is direct proof for the diagnosis of tuberculosis, while the presence of reactions of the tissues is indirect proof. The reaction of the tissues depends on several factors, such as the quality, quantity and strain of the bacilli, the conditions of immunity, the resistance of the tissues to the infection, and the portal of entry of the infection. The so-called tuberculous structure is only a phase in the cycle of the alterations caused by tubercle bacilli in the tissues. As Aschoff said in the Congress of Internal Medicine in 1921, "tuberculosis may produce both the typical histologic image of tuberculosis and the most varied aspects of inflammation." Loewenstein believes that there are certain forms of tuberculosis without a tuberculous structure, which follow the evolution of an acute or subacute infection, either with or without fever. On this ground, the speaker has tried to isolate tubercle bacilli in several diseases and pathologic conditions such as in dementia praecox. He found tuberculous bacillemia in 142 of a group of 359 cases of dementia praecox. Tuberculous bacillemia was discovered in four out of six cases of retrobulbar neuritis. According to Loewenstein retrobulbar neuritis, which was believed to be caused by the abuse of alcohol or tobacco is only an initial symptom of multiple sclerosis. The speaker believes that tuberculosis of the intima of the vessels causes first the internal erosion of the vessels followed by ulceration and sometimes by the rupture of the vessel. Tuberculosis of the intima is also responsible for the propagation of the tuberculous bacillemia. Loewenstein insisted on the existence of tuberculosis without the presence of a tuberculous nodule. Tuberculosis is, by preference, a vascular disease. Tubercle bacilli attack the endothelium of the vessels. The diagnosis of tuberculosis should not be excluded in necropsies until after a microscopic study and cultures of the organs suspected to be tuberculous have been made. The macroscopic examination of the organs is insufficient to make a correct diagnosis. That tuberculosis is a general and not a local disease is demonstrated by the clinical course of the disease, by its metastases to the various organs, by the characteristic fever chart, by the reaction of the conjunctiva of the tuberculous organism to tuberculin and by the presence of tuberculous bacillemia. The detection of tubercle bacilli in the blood is of more value in the diagnosis than the tuberculin reaction and the complement fixation test.

(To be continued)

## Marriages

JOHN MALLOY CLAYTON COVINGTON, Roanoke Rapids, N. C., to Miss Madge Westmoreland Balcome of Greenville, S. C., May 27.

WALTER MAUTHE, JR., Whitewater, Wis., to Miss Marie Joan Rolfs of Milwaukee, June 1.

CECIL E. NEWELL, Chattanooga, Tenn., to Miss Gretchen Thelen at Minneapolis, May 31.

RAYMOND H. KING, La Grange, Ga., to Miss Eleanor Haight of Jacksonville, Fla., April 28.

BERTHOLD AARON FREY, Los Angeles, to Miss Gertrude Cohen of Chicago, June 11.

ISADORE L. LEVIN, Lorain, Ohio, to Miss Judith Quasser of Portsmouth, May 28.

HAROLD E. ROE, Los Angeles, to Miss Leona Livingston at Chicago, May 6.

JOHN J. HOPKINS to Miss Iva Bromley, both of Decatur, Ill., May 7.

## Deaths

Edward Osgood Otis, Exeter, N. H., Harvard University Medical School, Boston, 1877, emeritus professor of pulmonary diseases and climatology, Tufts College Medical School, Boston, member of the Massachusetts Medical Society and the American College of Physicians, member and past president of the American Climatological and Clinical Association, past president and honorary director of the National Tuberculosis Association, past president of the American Public Health Association and the Massachusetts Tuberculosis League, in 1901 delegate to the Congress on Tuberculosis in London and in 1912 to the International Congress on Tuberculosis in Rome, corresponding member of the International Anti-Tuberculosis Association, major, medical reserve corps, U. S. Army, served during the World War, for many years on the staff of the Boston Dispensary and formerly visiting and consulting physician to the Rutland (Mass.) Sanatorium, author of "Tuberculosis, Its Cause, Cure and Prevention," and "Pulmonary Tuberculosis," aged 84, died May 28.

Waldo Webster Walker, Boston, State University of Iowa College of Homeopathic Medicine, Iowa City, 1913, member of the American Academy of Ophthalmology and Otolaryngology, fellow of the American College of Surgeons, assistant professor of laryngology and rhinology, Boston University School of Medicine, surgeon in the nose and throat department, Massachusetts Memorial Hospitals, aged 48, died, May 15.

John Howard Harter, Seattle, Western Reserve University School of Medicine, Cleveland, 1916, member of the American Academy of Ophthalmology and Otolaryngology, and the Pacific Coast Oto-Ophthalmological Society, fellow of the American College of Surgeons, on the staffs of the Columbus and Swedish hospitals, aged 45, died, May 13.

Thomas J. McKinney, Champaign, Ill., Medical College of Indiana, Indianapolis, 1883, Northwestern University Medical School, Chicago, 1898, member of the Illinois State Medical Society, fellow of the American College of Surgeons, on the staff of the Julia F. Burnham Hospital, aged 73, died, May 27, in the Kenilworth (Ill.) Sanatorium.

Waldemar Theodore Browne, New Orleans, Long Island College Hospital, Brooklyn, 1909, member of the Louisiana State Medical Society, veteran of the Spanish-American and World wars, director, bureau of communicable diseases, Louisiana State Board of Health, aged 58, died May 8, in the Charity Hospital, of heart disease.

Thomas Wray Grayson, Pittsburgh, Western Pennsylvania Medical College, Pittsburgh, 1897, member of the American Gastro-Enterological Association and fellow of the American College of Physicians, served during the World War, aged 61, died, May 16, of bulbar paralysis and cerebral hemorrhage.

Walter R. McCray, Charles City, Iowa, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900, past president and secretary of the Floyd County Medical Society, formerly county coroner, aged 58, died, May 15, in the Cedar Valley Hospital, of uremia.

**Robert Patton Hoxsey**, Beatrice, Neb College of Physicians and Surgeons of Chicago School of Medicine of the University of Illinois, 1901, member of the Nebraska State Medical Association, on the staff of the Nebraska Institution for Feeble Minded, aged 63, died March 23 of angina pectoris

**James Calhoun Harris**, Anderson, S C University of Maryland School of Medicine, Baltimore, 1883, member of the South Carolina Medical Association fellow of the American College of Surgeons, aged 74, on the staff of the Anderson County Hospital, where he died, May 8, of angina pectoris

**Louis Bernard Knecht** Mescalero, N M, Washington University School of Medicine, St. Louis, 1910, member of the Missouri State Medical Association, served during the World War physician in charge of the Mescalero Indian Hospital, aged 45, died, May 28, of a self inflicted bullet wound

**Morton Byron Fishbaugh**, Celina Ohio, College of Physicians and Surgeons Baltimore, 1893, member of the Ohio State Medical Association, president of the Mercer County Medical Society, aged 67, died May 30, in a hospital at Lima, following an operation for gallstones

**Eugene Cohn** Kankakee, Ill, Barnes Medical College, St. Louis, 1898, Northwestern University Medical School, Chicago, 1906, fellow of the American College of Surgeons, formerly superintendent of the Kankakee State Hospital, aged 58, died, May 30, of heart disease.

**Frederick Charles Esselbruegge** St. Louis, Washington University School of Medicine, St. Louis, 1906 served during the World War on the staff of the Christian Hospital, aged 49, died May 22, of pneumonia, following an operation for appendicitis

**Kenneth Moncur Lindsay**, Buffalo, University of Western Ontario Medical School, London, Ont., Canada 1928, member of the Medical Society of the State of New York, aged 31, died, March 10, in London, Ont., of pneumonia

**Elmer Forrest Hayden**, Tulsa Okla., University of the South Medical Department, Sewanee, Tenn, 1899, member of the Associated Anesthetists of the United States and Canada, aged 56 died May 21, of heart disease.

**Minor Revere Adams**, Statesville, N C University of Maryland School of Medicine, Baltimore, 1878 member of the Medical Society of the State of North Carolina, aged 78, died suddenly, May 27, of heart disease

**George B Burrus**, Woodland Mills, Tenn University of Nashville Medical Department, 1886 Vanderbilt University School of Medicine Nashville 1886 aged 75, died, April 28, in a hospital at Jackson.

**William Robert Blackburn**, Virginia, Ill, Barnes Medical College St. Louis, 1898 member of the Illinois State Medical Society aged 66 died, May 3, of pulmonary thrombosis and chronic myocarditis

**James Harney Fountain** Chapin Ill Rush Medical College, Chicago, 1881 aged 74 died May 14 in the Passavant Hospital, Jacksonville of morphine poisoning, presumably self administered

**Forbes Hamilton Broughton**, Wolcottville, Ind Indiana Medical College Indianapolis 1874, Civil War veteran, aged 84 died May 26 of chronic myocarditis, hypertension and arteriosclerosis

**Bruce McVean Mackall**, Washington, D C Georgetown University School of Medicine Washington, D C 1903, served during the World War aged 51, died May 1, of cerebral hemorrhage.

**William L Ruggles** Oak Park Ill Chicago Homeopathic Medical College 1891 on the staff of the West Suburban Hospital aged 68 died suddenly, April 29, of heart disease.

**Melville Silverberg**, San Francisco Johns Hopkins University School of Medicine Baltimore 1902, aged 56, died April 24 of hypertension myocarditis and coronary thrombosis

**Joseph Arthur Kuykendall**, San Francisco California Medical College, San Francisco 1896 aged 57 died April 20, in the Franklin Hospital of chronic myocarditis and nephritis

**Harry M Smith** Las Vegas N M Northwestern University Medical School Chicago 1891 on the staff of St. Anthony's Sanitarium and Hospital aged 63 died April 11

**Thomas Mason Evans**, Los Angeles Barnes Medical College, St Louis 1905 aged 51 died April 12 in the Olive View (Calif) Sanatorium of chronic pulmonary tuberculosis

**Eleanor Clary Stocks**, Chicago Johns Hopkins University School of Medicine Baltimore, 1920 aged 40 died May 27, in the Wesley Memorial Hospital, of bacterial endocarditis

**Harry E Mayor**, Troy Grove, Ill, Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900, aged 57 died, May 22, as the result of a cerebral hemorrhage

**Horatio N Boshell** Melvin, Ill, Rush Medical College, Chicago, 1895, aged 61, died, May 27, in St. Mary's Hospital, Kankakee, of injuries received in an automobile accident

**Thomas Byron King** Gainesville, Fla, Atlanta School of Medicine, 1911, on the staff of the Alachua County Hospital, aged 46, died suddenly, May 7, of heart disease

**James J Rhodes**, Cummings Kan., University Medical College of Kansas City, 1900, member of the Kansas Medical Society, aged 54, died May 20, of chronic nephritis

**William N Edenfield**, Vienna, Ga, University of Georgia Medical Department, Augusta 1892, member of the Medical Association of Georgia, aged 68, died, April 17

**Maury B Linkous**, Blacksburg, Va, University College of Medicine, Richmond, 1899 member of the Medical Society of Virginia, aged 59, died suddenly, April 29

**Victor Theodore De War** Grand Junction, Colo, Northwestern University Medical School, Chicago, 1928, aged 31, was killed, May 26, in an airplane accident.

**Alfred Bradley**, Barthell, Ky, University of Louisville (Ky) School of Medicine, 1909, member of the Kentucky State Medical Association, aged 57, died, April 14

**Frank Sperber** New York University and Bellevue Hospital Medical College, New York 1921, aged 35, was killed, May 18 in an automobile accident.

**Joseph W Lowry** Ironton, Ohio University of Louisville (Ky) School of Medicine 1893 aged 66, was found dead in bed, May 24, of cerebral hemorrhage.

**Roswell Elmore Flack** Memphis Tenn Johns Hopkins University School of Medicine, Baltimore, 1913, aged 55, died, May 23, of cerebral hemorrhage

**Edward Joseph Sullivan**, Boston, Tufts College Medical School, Boston, 1931, aged 27 intern, Boston City Hospital, where he died, May 17, of pneumonia

**Carl Frederick Haish**, Santa Ana, Calif, Kansas Medical College, Medical Department of Washburn College, Topeka, 1897, aged 67, died, March 26

**Leander F Cain**, Caldwell Ohio, Kentucky School of Medicine, Louisville, 1877, formerly member of the state legislature, aged 76, died, April 27

**Steve Harmon Anderson**, Kiln Miss Mississippi Medical College, Meridian, 1907 aged 57, died, May 5, of actinomycosis of the scalp and skull

**W D Frederick**, Sidney, Ohio Physio-Medical College of Indiana, Indianapolis 1884 aged 72, died suddenly, May 10, of cerebral hemorrhage

**John F Barthell**, Howard S D, State University of Iowa College of Medicine Iowa City, 1891, aged 64, died, April 30, of angina pectoris

**Henry Driessel**, Kewaskum, Wis Louisville (Ky) Medical College, 1898 for many years health officer of Kewaskum, aged 80 died April 25

**Waldo Unruh Kurtz**, Wanamassa, N J Trinity Medical College Toronto, Ont Canada, 1896, aged 65 died, May 14, of cerebral hemorrhage

**Ross Allen Harris**, Los Angeles Rush Medical College, Chicago, 1899 aged 68 died April 17, of coccidioidal granuloma with meningitis

**Fouche Warren Samuel**, Louisville, Ky, Kentucky School of Medicine Louisville, 1886, aged 66 died suddenly May 13, of heart disease

**James Allen Lynch**, Pendleton, Texas Hospital College of Medicine, Louisville, Ky, 1877, aged 82 died May 6, of myocarditis

**George W Haverstick**, University City, Mo Beaumont Hospital Medical College, St. Louis 1895 aged 65, died April 30

**Lorne Drum** Ottawa Ont Canada McGill University Faculty of Medicine, Montreal, Que., 1896 aged 62 died April 17

**George Hugh McCain**, Whitehaven Tenn Memphis Hospital Medical College 1890, aged 66, died, May 11, of heart disease

**George P Hitchcock**, Los Angeles, Hahnemann Medical College and Hospital Chicago 1904 aged 75 died April 25

**Anna C Shipley**, Seaford Del Woman's Medical College of Baltimore 1902 aged 65, died May 8, of heart disease

**Luther Lafayette Sapp**, Reidsville N C Jefferson Medical College of Philadelphia 1889 died April 5

## Correspondence

**"TRAUMATIC ULCER OF THE DUODENUM AND STOMACH"**

*To the Editor*—In THE JOURNAL, May 27, Drs Crohn and Gerendasy report a case and discuss the subject of traumatic ulcer of the duodenum and stomach. The conclusion that "the evidence seems convincing that the trauma caused the ulcer" might be misleading. The reference to "students of gastroenterology refusing to accept the concept of traumatic gastric ulcer" calls for elucidation as to just what this concept is.

The four postulates of Liniger and Molineus satisfactorily exclude cases of pseudo-ulcer but fail to explain why gastro-duodenal trauma should be followed by the development of ulcer in certain cases and not in others.

The evidence in the reported case is certainly convincing, that the trauma caused the injury to the duodenal mucous membrane. Of this sequence there can be no reasonable doubt.

Because the intestinal mucosa, like the skin, has an inherent tendency toward repair, something more than the injury is probably necessary to cause chronic ulcer, such as the presence (or absence) of a something in the gastric content or in the body fluids or cells that interferes with spontaneous healing of the damaged duodenal mucous membrane.

Under the heading of pathology it is stated that "the symptoms point to the formation of a true peptic ulceration occupying the seat of the trauma and caused, presumably, by the peptic digestion of the lacerated and blood-suffused mucosal tissue." It is such a condition of hypergastric function or hyporesistance to gastric juice, called "an ulcer constitution and chemism" that may convert a simple contusion, laceration or abnormality of the gastro-intestinal wall into a true chronic ulcer.

It should be emphasized that the trauma may be severe and grossly evident or so slight as to be unappreciated and that it may be either physical or psychic.

Recognition of the fact that the trauma may be a preliminary factor and not a final cause is not merely academic but may be of medicolegal importance and of therapeutic value.

Treatment should aim at prevention or repair of perforation, hemorrhage or obstruction at the correction of this 'ulcer constitution' to promote healing of the gastric or duodenal traumatism, and at the avoidance of additional trauma.

GREGORY CONNELL, M D, Oshkosh, Wis

**"COMMERCIAL ASPECTS OF BACTERIOPHAGE THERAPY"**

*To the Editor*—I would like to congratulate THE JOURNAL for blasting the commercial aspects of bacteriophage therapy in the issue of May 20. I only wish that the rank and file of the profession would wait for the report of the Council on Pharmacy and Chemistry before swallowing hook, line and all of the bacteriophage panacea.

A valuable article appeared in *Northwest Medicine* (32:106 [March] 1933) on "Mobilization of the Reticulo-Endothelial Cells as Aid to Cure," by Dr S H Tashjian of Seattle. He uses nutrient broth, which seems to do everything claimed by different "phagists."

In the clinic with which I am associated we have had similar results with nutrient broth injections for carbuncles, chronic indolent ulcers, varicose ulcers, and a wide variety of infections. Similar results from other clinics and hospitals are daily reported. I think this is a forward step in modern therapeutics with a scientific basis.

O F LAMSON, M D, Seattle.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

## ANOREXIA IN ADOLESCENTS

*To the Editor*—A boy aged 17 whose family history was negative with the exception that the mother had stomach trouble during childhood had children's diseases of no unusual character and what might have been a mild muscular rheumatism tonsillectomy was performed two years ago. Since that time he has had no sensation of hunger at all. He complains of some distress in the epigastrium after two days without food but no hunger. He has vomited once. An urticarial rash has appeared on several occasions. He has lost some weight. His weight is 138 pounds (62.6 Kg) about normal. His general appearance is good. Nervousness was apparent during the examination. His mental make up is better than usual. The blood pressure at the first examination was 152 systolic 85 diastolic. At the second examination some days later 120 systolic, 75 diastolic. The urine was highly acid but otherwise normal. The diet is of insufficient caloric content. The chief complaint aside from lack of appetite is of fatigue on slight exertion and tremor of the hands. Treatment has consisted of the usual bitter tonics hydrochloric acid iron and bromides. Administration of sugar cleared up the tremor and much of the feeling of fatigue. The sense of taste seems to be normal. Otherwise there has been no improvement except a slight gain in weight. Please omit name. M D Michigan.

ANSWER—This unusual anorexia in an adolescent boy may have an organic basis. Anorexia, fatigue and tremor are the only symptoms and signs mentioned. The blood pressure at first examination was, no doubt, elevated by nervousness, as the recorded blood pressure determination would be within normal limits for this patient.

The anorexia, fatigue and tremor might all be caused by a mild degree of hyperthyroidism. Enlargement of the thyroid gland at this age is most commonly a simple colloid goiter. However, eye signs, vasomotor instability and tachycardia combined with determination of the basal metabolic rate, would aid in the establishment of such a diagnosis.

An incipient tuberculosis at puberty might evidence itself by the signs and symptoms mentioned. Careful physical examination, combined with laboratory sputum and roentgen examinations, would establish the diagnosis of such a condition. A negative tuberculin reaction would be valuable in ruling it out.

Chronic peptic ulcer, of which hunger pain and anorexia are symptoms, is uncommon but not unknown at this age. Ulcer may be associated with allergic manifestations, which could account for the urticarial rash noted on several occasions. An Ewald meal, stool and roentgen examination would aid in the verification of such a diagnosis. If all organic etiologic explanations of the patient's signs and symptoms are found negative a constitutional or functional disorder must exist. Children with an asthenic constitution are of poor nutrition, with a weak, flabby musculature. The appetite is frequently impaired, and constipation is the rule. Gastric dilatation and ptosis of the abdominal viscera are frequent. Gastric acidity is often diminished or absent. Atony, enteroptosis, neurasthenia and dyspepsia have been considered the most important criteria for the diagnosis of a constitutionally asthenic child.

Asthenia is not uncommon during adolescent life and tends to recede with advancing years. The treatment in such a condition consists in exercise to strengthen the body musculature. Abdominal support for ptosis is of value, and a coarse diet, with plenty of fruits, vegetables, coarse cereals, butter, cream, eggs, milk and sugar will aid constipation and, by adding weight, will help to relieve ptosis and digestive disturbances.

## SODIUM AMYTAL AND TRIBROMETHANOL AS ANALGESIC IN LABOR

*To the Editor*—Can sodium amytal and Avertin (tribrom-ethanol) be combined as an analgesic in obstetric practice? What if anything is wrong with the following procedure if the dose and administration to the patient are proper? In the primary stage of labor with active regular contractions  $\frac{1}{4}$  grain (11 mg) of morphine sulphate and  $\frac{1}{160}$  grain (0.4 mg) of scopolamine to be followed in two hours by 6 grains (0.4 Gm) of sodium amytal provided this holds the patient fairly comfortable at the beginning of the second stage of labor the correct weight dosage of tribrom-ethanol supplemented with ether if necessary in delivery and perineal repair. Can sodium amytal be carried further than the 6 grain dose and can the scopolamine be repeated without any bad effects? Please omit name. M D Arizona.

ANSWER—Sodium amytal has been used extensively in obstetrics during the last few years but opinion concerning its merits is divided. Some praise it unqualifiedly whereas others are dissatisfied with it. The drug has three major

disadvantages First, administration requires some technical skill, hence only a physician should administer it and watch the patient (not a nurse) Second, it frequently produces excessive and annoying restlessness, and this requires an increased personnel in attendance. Third the drug makes necessary an increased number of instrumental deliveries. Some obstetricians have reported a rather large incidence of narcotized or apneic babies. Sodium amylal does however produce satisfactory analgesia, amnesia and relaxation of the soft parts.

Tribrom ethanol has likewise been given an extensive trial by some obstetricians, but this drug has a narrow margin of safety. Therefore it also must be carefully controlled by a physician and not by a nurse. DeLee believes that pregnant women are more susceptible to its deleterious effects than nonpregnant women. The drug is pleasant to take and when combined with an inhalation anesthetic is useful in many cases.

Since either sodium amylal or tribrom-ethanol when used alone may occasionally produce harm if great care is not used, it is unwise to use a combination of them in the same patient. Certainly if morphine and scopolamine are to be used as analgesias and ether as an anesthetic either sodium amylal or tribrom ethanol alone will surely suffice and will be far safer than the two combined. It is not advisable to give more than 0.4 Gm of sodium amylal unless labor is much prolonged when an additional 0.2 Gm may be given. A second dose of scopolamine may likewise be administered under the same conditions but it is best not to give more than a total of 0.6 mg ( $\frac{1}{400}$  grain) throughout labor.

#### USE OF MILD SILVER PROTEIN IN NOSE—TREATMENT OF LARYNGITIS IN CHILDREN—ANTI SEPTIC TROCHES

*To the Editor*—1 Many children struggle on nasal instillations of medication. Do you feel that the instillation of mild silver protein in nasopharyngitis is of more value than the effect of struggling? 2 Is there any objection in using morphine or atropine in treating acute attacks of spasmodic croup (nondiphtheritic) in preference to emetics or inhalations? Kindly suggest the dosage for a child 5 years old. 3 What antiseptic troches if any can you suggest for prevention of contagious disease after contact? Kindly omit name.

M D New York.

*ANSWER*—1 Nasal instillation of mild silver protein is objectionable not only because it is probably of little value and causes struggling but also because it discolors the nares, handkerchief and bedding.

2 Morphine should not be used in the bronchitis of children because of the danger of retention of secretion hence it should not be employed in laryngitis because of the likelihood of its being complicated with bronchitis. At the most minimal doses should be given. The dose of morphine sulphate for a child of 5 may be placed at 0.003 Gm but probably not more than 1 mg every two hours for three doses, if required would be justifiable in laryngitis. Atropine sulphate might be associated with the morphine in one-tenth or one twentieth the dose of the latter. Codeine phosphate in doses up to 0.005 Gm might be preferable. Spasmodic croup is composed of two elements inflammation of the laryngeal mucous membrane and spasm which is a purely nervous reflex manifestation. Inhalations and nauseant expectorants (such as ipecac) have a favorable effect on the inflamed mucosa and should not be omitted. The nervous element responds in milder cases to sodium bromide (0.10 Gm for each year) with antipyrine (0.05 Gm for each year) repeated every two hours. In severe cases chloral hydrate which might have to be given by rectum in dosage of from 25 to 50 cc of a 1 per cent solution in starch water is useful. These sedatives because less specifically antitussic are safer than the opiates in this condition.

3 There are no such troches. There is nothing powerful enough to disinfect the mouth that could be used in this form.

#### MALARIA IN TEXAS

*To the Editor*—Is malaria prevalent enough in Texas to warrant taking prophylactic doses of quinine? My patient had the disease while working in that state last year and has come to me for advice as he is to return there in the near future. Please omit name.

M D Connecticut.

*ANSWER*—The advisability of taking prophylactic quinine in this case involves both the severity of malaria in Texas and the general question of the effectiveness of such prophylaxis. Compared to most tropical countries the eastern half of Texas where most of the malaria occurs presents only a moderate malaria problem. Furthermore although there is still considerable difference of opinion as to the effectiveness of prophylactic quinine, there is a mass of evidence that in the doses usually employed it will not prevent infection although it may hold down the acute clinical symptoms of the initial attack and allow the body to acquire a partial immunity to the infection while still harboring the organism. In view of these considerations, it is recommended that the patient be not given so-called prophylactic quinine but that he be advised at the first suggestion of an attack of malaria to consult a physician for diagnosis and early treatment.

#### USE OF DRYCO AS NONSPECIFIC PROTEIN IN PLACE OF MILK NOT RECOMMENDED

*To the Editor*—I have been using milk injections more or less with impunity for nonspecific protein therapy and recently had the bright idea of making a solution from Dryco which appeared to me to be ideal in that it was a low fat containing natural milk product. Following the first intramuscular injection in a case of chronic gonorrhea the patient experienced a terrific reaction which I could not associate with milk from my previous experiences. As an afterthought I looked on the can and found a note which showed that all drug store Dryco is irradiated. Naturally I attributed the reaction to this activation. Could you give me any information on this subject? Are there any reports or references to any literature on the effect of parenteral administration of irradiated biologicals?

M D California.

*ANSWER*—In the absence of specific knowledge or experience, it is believed that the observations of the correspondent on injected irradiated Dryco would be entirely logical. Irradiation with ultraviolet rays is known to affect proteins and, in certain cases, irradiated Dryco or, in fact, other irradiated protein material might give the reaction noted.

Though no references in the medical literature shed light on the question, there is ample technical evidence to the fact that the nature of protein material is altered by irradiation. In the present instance, however, this particular reaction should not be accepted as a specimen case. The question of reaction when protein is injected into the blood stream always involves susceptibility of the individual. Whether the case in hand is typical of milk protein or whether the idiosyncrasies of the patient are the dominant factor is something that could be determined only by further investigation.

In promiscuously injecting unknown milks, one would seem to be taking a long chance, and many things might happen which could be accounted for other than by irradiation to which Dryco has been subjected. As one authority sees the matter, injection of promiscuous milks because they happen to be milk is not considered to be ideal practice.

#### INSULIN REACTION IN DIABETES

*To the Editor*—A woman aged 44 has been taking insulin for several years and for some time now has presented this problem. The insulin dosage is 30-25 U units for meals. The urine clears of sugar after the evening meal but she is awakened about 1 or 3 a. m. with marked nervousness sweating and hunger. Sometimes she takes a little orange juice and sometimes she takes nothing but the first specimen she passes in the morning before breakfast always shows heavy sugar. Omitting the evening dose of insulin eliminates this reaction. At the time of the reaction the urine is sugar free. I have used low carbohydrate diets and am now having her on a diet of 150 Gm of carbohydrate 60 Gm. of protein and 110 Gm. of fat. I would appreciate any advice you might give me that I might eliminate the insulin reaction during the night and at the same time clear up the morning glycosuria. Please omit name.

M D Iowa.

*ANSWER*—A case such as described always presents a difficult problem. Physical activity seems to have a great influence on the carbohydrate balance in such patients and it is sometimes impossible to avoid early morning glycosuria without disturbing the normal daily routine. From the point of view of the patient's welfare, it is doubtful whether such glycosuria is harmful, provided the diabetes is well controlled through the rest of the twenty-four hours. However, if it is considered worth while disturbing the present control of the case, the following rearrangement of the dosage of insulin might be tried: breakfast, 35 units; lunch, 0; dinner, 15; bedtime (say 11 to 12) 10 units. This should allow the patient to go to bed with a higher blood sugar level, so that no reaction ought to be expected at 1 or 2 in the morning. The bedtime dose of insulin however should reach the height of its effect at about the time the patient's blood sugar naturally rises and may thus eliminate the early morning glycosuria. It may be safer, in this case, to try the breakfast and dinner doses only for a day or two, before starting the bedtime dose, in order to become quite certain that the patient is going to bed with a moderately high blood sugar level. The size of the suggested doses are, of course, only guesses and should be readjusted according to the reaction of the patient. The higher carbohydrate diet now being received should favorably influence the treatment.

## TOXICITY OF ACRIFLAVINE USED INTRAVENOUSLY

To the Editor—The following statement is taken from a booklet compiled by a leading physician. Gonorrhoea—In the Male. Inject intravenously 5 cc. of a 2% solution of neutral acriflavine (Abbott) A daily injection is given for the first week and 3 times weekly thereafter for from 12 to 36 injections the minimum and maximum respectively that I have found necessary for complete cure. No other treatment is necessary though there is no objection to combining with local treatment if so desired. Please let me know what THE JOURNAL thinks of it. Would the procedure be safe? Please omit name and address.

M D Georgia

ANSWER—P J Crittenden (*J Pharmacol & Exper Therap* 44 423 [April] 1932) states that certain preparations of acriflavine are definitely toxic, causing changes in the heart rate circulation and respiration and nausea and vomiting in intravenous doses of from 2 to 5 mg per kilogram. A neutral preparation of acriflavine can be prepared which in doses of from 1 to 2 mg per kilogram causes slight or no changes in the heart rate respiration and blood pressure. Even the least toxic preparation of acriflavine in small doses stimulates and in larger doses depresses the peripheral vagal mechanism of the heart.

Heathcote and Urquhart (*J Pharmacol & Exper Therap* 38 145 [Feb.] 1930) were prompted to study the pharmacologic and toxicologic actions of acriflavine because of two deaths after the intravenous use of the drug, one death being due to jaundice and the other to acute yellow atrophy. Experiments on dogs and rabbits showed that a dose of 30 mg of acriflavine per kilogram intravenously caused death in one hour, with symptoms first of respiratory failure with asphyxia and then the heart ceased to beat. In fifteen dogs the pathologic examination revealed marked changes in the kidneys and the liver.

## ADDICTION TO ACETANILID

To the Editor—I have had a good deal of experience taking patients off of narcotics and have found that when the drug is stopped all at once instead of a tapering off the patients have delusions and hallucinations. A few months ago I had occasion to attend a man who had been in the habit of taking about 60 grains (4 Gm) of acetanilid a day. His lips were bluish and his skin was chalklike. I stopped the drug immediately and for about ten days the patient was a raving maniac. I have had experience with one other person who used acetanilid by sniffing. The effect produced on the patient in this instance was the same as found in a cocaine fiend. 1. Will acetanilid taken by mouth in quantities as large as 60 grains a day cause the patient to become addicted to the use of the drug as a dope fiend would to any other narcotic? 2. Will the reaction be the same as far as mental disturbances are concerned as that of a morphine or cocaine addict if the drug is stopped all at once? 3. Will the mental condition produced by the taking of 60 grains of acetanilid a day be on a par with that of any other dope fiend while under the influence of the drug? Please omit name.

M D South Carolina

ANSWER—1 There is no doubt that acetanilid addiction can and does occur.

2 While the reaction to sudden deprivation of the habituated drug may be similar to that of sudden withdrawal of morphine or cocaine such is usually not the case.

3 No. The euphoria-producing tendencies of morphine and cocaine are notoriously greater.

## URTICARIA PIGMENTOSA

To the Editor—I should appreciate your giving me some information with regard to treating and diagnosing a case I have. The patient a girl aged 3 has had an urticaria since she was 3 weeks old. It resembles the picture of urticaria pigmentosa in the Atlas of Diseases of the Skin put out by P. Blakiston's Son & Co. At times it seems to be made worse by milk. She has a dry skin and is very nervous. I treated the father for syphilis about three years before the child was born. He had a negative Wassermann reaction before he married and it has been negative ever since. The child's blood and the mother's have been negative each time I have had it examined. Please omit name.

M D Florida

ANSWER—Urticaria pigmentosa is not urticaria and has no relation to syphilis. Its etiology is unknown though many authorities hold that it is a form of nevus. Milk should not be blamed unless it can be shown definitely to cause increased itching. The dry skin should be protected from the drying effect of soap and hot water, after the bath, ointment of rose water should be applied. Oatmeal water may be used for the bath. If this does not prevent itching two parts each of Pusey's calamine liniment calamine powder and zinc oxide in sixteen parts each of solution of calcium hydroxide and olive oil may be used frequently, an antipruritic such as coal tar solution, from 5 to 10 per cent, being added if necessary. In certain cases the brown spots have gradually disappeared after some years in others they have persisted indefinitely. The only treatment that may affect them is radiotherapy, suberythema

doses of x-rays or radium. Larger doses are not justified. This should be tried preferably on one spot first. The disease is harmless aside from the cosmetic defect.

The child in question should be watched for signs of syphilis until after puberty but no treatment for syphilis should be given until it is shown to be present.

## DETERMINING FUNCTIONAL POWER OF TESTIS

To the Editor—A man aged 44 was operated on for hydrocele. In the operative procedure the surgeon cut through the skin muscles and tunica and sliced deeply into the testicle which at that time was perfectly normal. When the testicle was incised the incision extended deeply in fact almost half the tubules poured out of the incision and much of the tissue was wiped away with sponges. It was one of those accidents that do occur. The testicle proper was sutured and a typical bottle operation was performed for the hydrocele. After the operation which took place July 5 1918 the hydrocele promptly recurred and is now quite large and has persisted from the date of operation to the present. At a later date in 1919 the patient married and became the father of two children one born in 1920, the other in 1922. At present examination the traumatized testicle is approximately three or four times the size of the normal testicle. The patient claims that he has lost the procreative power of the enlarged highly sensitive, exquisitely tender testicle which opinion is concurred in by several examining physicians and surgeons. There is no evidence of a tendency toward malignancy. What I want to know is: What means or what method of procedure or examination can a physician undertake to determine whether or not procreative power has been lost? That is the question that must be determined. I know of no way of determining the absolute facts except by the presumptive evidence of loss of function as manifested by hyper trophy hyperplasia the engorgement loss of tubules and scar tissue and presence of recurrent hydrocele extending up and involving the cord and the external ring of the inguinal canal. I will thank you for an opinion on this case and also citation of authorities. Please omit name.

M D Texas.

ANSWER—There are two ways of determining more or less accurately the procreative function of a testicle. One is to catheterize the ejaculatory duct on the side through the posterior urethroscope and examine the fluid thus obtained for spermatozoa. The other method is to stick a rather large aspirating needle attached to a syringe into the testicle and epididymis and aspirate these parts and examine the aspirated fluid thus obtained for spermatozoa. The latter procedure is simple but gives no information as to the permeability of the various tubes that convey the spermatozoa from the testicle to the urethra.

## INJECTION OF VAS FOR VESICULITIS

To the Editor—What is the status of injections into the vas with dis infectants for chronic vesiculitis in old cases of gonorrhea? If advisable what chemicals are best suited?

G W MONTGOMERY M D Caldwell Idaho

ANSWER—The injection into the vas deferens of various germicidal drugs for the treatment of chronic vesiculitis has had extensive trial and has proved of but questionable benefit. The necessity of incising the duct in order to inject the germicidal solution adds to a somewhat minor surgical procedure the possibility of postoperative stricture, which is increased if the fluid injected is at all irritating. Moreover, the necessity of making a skin incision in order to reach the duct tends to make a repetition of the procedure unlikely and as a single injection of any medication is seldom curative, the method has been generally abandoned by the majority of urologists or only occasionally employed in the more refractory cases usually with disappointing results. Mild silver protein preparations are the drugs most frequently used.

## DOSAGE OF IRON AND AMMONIUM CITRATE

To the Editor—Dr V C Rowland in his article Anemia of Pregnancy (*THE JOURNAL* February 25 p 539) recommends the use of massive doses of iron—from 90 to 120 grains (6 to 8 Gm) daily—in treating the hypochromic type of anemia. He then suggests a 50 per cent solution of iron and ammonium citrate in drachm doses. The quantity of iron in a drachm dose of a 50 per cent solution of iron and ammonium citrate is about 5 grains (0.3 Gm). I am wondering whether or not the 'massive doses' refer to the iron salt recommended rather than to the iron itself. The Epitome of the U S P states that iron and ammonium citrate contains about 17 per cent of iron. Please omit name.

M D Long Island N Y

ANSWER—Dr Rowland writes 'The dose of 90 to 120 grains refers to the salt, iron and ammonium citrate. In speaking of massive doses of iron, the term iron' is used in a general sense without reference to the particular form or salt used. This dosage is massive in comparison with the commonly used amounts of iron previous to the newer methods in the treatment of anemia.'

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALABAMA Montgomery July 11 14 Sec Dr J N Baker 519  
Dexter Ave Montgomery

CALIFORNIA Regular San Francisco July 10 13 and Los Angeles  
July 24-27 Reciprocity Los Angeles July 24 Sec. Dr Charles B  
Pinkham 420 State Office Bldg Sacramento

COLORADO Denver July 5-8 Sec. Dr Wm. Whitridge Williams  
422 State Office Bldg Denver

CONNECTICUT Regular Hartford, July 11 12 Endorsement July  
25 Sec Dr Thomas P Murdock, 147 W Main St Meriden  
Homeopathic New Haven July 11 Sec Dr Edwin C M Hall 82  
Grand Ave. New Haven

DISTRICT OF COLUMBIA Basic Science Washington June 29 30  
Regular Washington July 10 11 Sec Dr W C Fowler 203 District  
Bldg Washington

MAINE Augusta July 5 6 Sec Dr Adam P Leighton Jr 192  
State St Portland

MASSACHUSETTS Boston July 11 13 Sec Dr Stephen Rushmore  
144 State House, Boston

NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II The  
examinations will be held at centers where there are five or more candi-  
dates Sept. 13 15 Ex Sec Mr Everett S Elwood 225 S 15th St.  
Philadelphia.

NORTH DAKOTA Grand Forks July 5 8 Sec Dr G M Williamson  
4½ S 3rd St Grand Forks

OREGON Portland July 4 6 Sec Dr Joseph F Wood 509 Selling  
Bldg, Portland

PENNSYLVANIA Philadelphia and Pittsburgh July 11 15 Sec  
Mr Charles D Koch 400 Education Bldg Harrisburg

RHODE ISLAND Providence July 6 7 Dir Dr Lester A Round  
319 State Office Bldg Providence

SOUTH DAKOTA Watertown July 18 Dir Dr P B Jenkins  
Waubay

WASHINGTON Basic Science Seattle July 13 14 Regular Seattle  
July 17 18 Dir Mr Harry C Huse Department of Licenses  
Olympia

### Oregon February Report

Dr Joseph F Wood, secretary Oregon State Board of  
Medical Examiners, reports one physician licensed by reciprocity  
and one by endorsement, Feb 1, 1933 The following colleges  
were represented

College	LICENSED BY RECIPROCITY	Year	Reciprocity
Lincoln Medical College of Cotner University		Grad	with
		(1899)	Nebraska
College	LICENSED BY ENDORSEMENT	Year	Endorsement
St Louis University School of Medicine		Grad	of
		(1931)	N B M Ex.

### Vermont February Examination

Dr W Scott Nay secretary, Vermont State Board of Medi-  
cal Registration, reports the written examination held in  
Burlington Feb 14-16, 1933 The examination covered 12 sub-  
jects and included 90 questions An average of 75 per cent  
was required to pass Two candidates were examined both of  
whom passed The following college was represented

College	PASSED	Year	Per
University of Vermont College of Medicine (1931) 90 3		Grad	Cent
		(1932)	90 4

### West Virginia March Report

Dr David Littlejohn acting secretary, Public Health Council  
of West Virginia reports the oral written and practical exami-  
nation held in Charleston, March 14-16, 1933 The examination  
covered 12 subjects and included 120 questions An average  
of 80 per cent was required to pass Two candidates were  
examined both of whom passed Thirteen physicians were  
licensed by reciprocity with other states and one physician was  
licensed by endorsement The following colleges were repre-  
sented

College	PASSED	Year	Per
Medical College of Virginia	(1931) 84 2	Grad	Cent
		(1932)	89
College	LICENSED BY RECIPROCITY	Year	Reciprocity
George Washington University School of Medicine		Grad	with
Georgetown University School of Medicine		(1931)	Maryland
University of Georgia Medical Department		(1920) Dist	Colum.
Chicago Hospital College of Medicine		(1931)	Georgia
University of Louisville School of Medicine		(1917)	Illinois
University of Maryland School of Medicine		(1928)	Kentucky
University of Maryland School of Medicine and College of Physicians and Surgeons		(1901)	Georgia
		(1929)	Maryland

Ohio State University College of Medicine (1921)- Ohio  
University of Tennessee College of Medicine (1925) Tennessee  
Medical College of Virginia (1930) Ohio  
(1929) (1931) Virginia  
University of Virginia Department of Medicine (1924) Virginia

College  
Johns Hopkins University School of Medicine

LICENSED BY ENDORSEMENT  
Year Endorsement  
Grad of  
(1926) N B M Ex.

## Book Notices

**Surgical Pathology of the Diseases of Bones** By Arthur E Hertzler  
MD Surgeon to the Agnes Hertzler Memorial Hospital Halstead Kansas  
Hertzler's Monographs on Surgical Pathology Cloth Price \$5 Pp 272  
with 211 Illustrations Philadelphia J B Lippincott Company 1931

The author gives a clear exposition of all the chief diseases  
and tumors of bone The acute inflammatory diseases of bone  
are divided into those resulting from infection from without  
and those of the blood borne type A chapter is added on  
osteomyelitis in special regions The clinical features and the  
gross and microscopic pathology are excellently handled. As  
in the rest of the book, treatment is not emphasized and the  
author confines himself strictly to the pathologic features of  
the disease which he feels will be of benefit to the clinical  
surgeon The chapters devoted to chronic inflammation of  
bone and to specific infection are perhaps too brief Paget's  
disease and von Recklinghausen's osteitis fibrosa cystica are  
included in these chapters with questionable justification The  
more common conditions of chronic osteomyelitis Brodie's  
abscess Garre's sclerosing osteitis tuberculosis and syphilis  
are well described A brief review is given of bone diseases  
of unknown origin, including those dependent on metabolic  
disturbance about which definite etiologic factors are known,  
such as rickets and scurvy

Part II is devoted to tumors of bone The chapter on  
osteomas includes hyperostoses ossifying hematoma and exos-  
toses in which the distinction between osteochondroma and  
osteomas forming in membranous bones are not adequately  
drawn This does not detract from the excellence of the  
pictures chosen to illustrate the various types In the chapter  
on chondromas, the author is on surer ground This is true  
also of the chapters on myositis ossificans and the chapter  
devoted to both giant cell tumor and bone cysts By far the  
best chapters on bone tumors are those devoted to osteogenic  
sarcoma Here the cases and illustrations are well chosen and  
unusually complete. This is true also of the discussion of  
Ewing's sarcoma Multiple myeloma is briefly considered,  
as is metastatic carcinoma

The entire book is compact, is easily read and forms an  
excellent introduction to the subject for the student and the  
busy surgeon As a reference book many of the entities  
discussed are too briefly presented and some listed in the  
author's own classification, such as chloroma and lipoma, are  
entirely omitted

**Diseases of the Eye** By Hofrat Ernst Fuchs Authorized translation  
by E V L Brown MD Professor of Ophthalmology University of  
Chicago The fifteenth German edition of the *Lehrbuch der Augenhell-  
kunde* as revised by Maximilian Salzmann Professor of Ophthalmology  
University of Graz Austria Tenth English edition Cloth Price \$7  
Pp 641 with 206 Illustrations Philadelphia Montreal & London J B  
Lippincott Company 1933

The appearance of a new edition of Fuchs has been awaited  
eagerly by American ophthalmologists The last English edi-  
tion was published in 1924 Since that time both Professor  
Fuchs and his veteran translator, Alexander Duane, have died,  
but one feels that the demand for this great textbook will con-  
tinue and will justify the publishers in undertaking this new  
translation The choice of Dr Brown long a disciple of Pro-  
fessor Fuchs, translator of Salzmann's *Anatomy of the Eye*  
and an authority on the teaching of ophthalmology, to under-  
take this work was a fortunate one The idea of publishers  
and translator was to produce a suitable and not too expensive  
textbook for American undergraduates They have therefore  
reduced the size of the present edition by nearly 400 pages  
The chapter on refraction, written by Duane has been omitted  
in accordance with the translator's belief that refraction should  
not be taught to American undergraduates For the same  
reason the chapter on ophthalmic operations has been omitted

The chapters on anatomy, physiology, pathology and therapeutics have been omitted as special sections, but much of their material especially that on anatomy, has been redistributed at the heads of various chapters. Thus eight pages are devoted to the anatomy of the cornea fourteen to that of the uveal tract and five to that of the retina and optic nerve in the corresponding chapters arranged with obvious advantages. In this arrangement and in all other respects the author has closely followed the fifteenth German edition, as revised by Professor Salzmann. An important addition to this edition over earlier ones is the colored fundus pictures. Forty-one of these drawn by Salzmann and well reproduced, illustrate most of the common and some of the less common ophthalmoscopic conditions. This replaces the twenty-two fundus plates of previous editions. A valuable chapter on the central visual pathways has been added apparently Professor Salzmann's contribution. Duane's well known chapter on motor anomalies which was a feature of later English editions has been replaced by one half as long but excellent in its clearness and choice of the most important matter.

It is hardly necessary to emphasize the qualities that have made this textbook a classic in the teaching of ophthalmology all over the world. Fuchs was essentially a great clinician and his valuable discussions of pathology are not allowed to crowd out his clear and vivid description of the clinical observations necessary for diagnosis descriptions that have never been excelled. The translation is more literal than that of Duane occasional instances of quite Germanic structure being carried over into the English text. It is apparently a completely new translation and on the whole is clear and readable.

One might criticize the absence of any translator's notes which would bring certain subjects down to date. Thus it is strange to see the old description of rheumatic iritis given without any mention of focal infection by one who knows his focal infections as Dr. Brown does while in the Duane edition so-called rheumatic iritis and gonococcal iritis were grouped as focal iritis with proper reference to the importance of various common foci. Another classic concept that seems to require a note of modification is the belief of Fuchs that closure of the central retinal artery is nearly always due to an embolus. The work of Harms and Scheerer seems to leave no room for doubt that many if not most of such cases are due to endarteritis and other causes. One might also object to the statement of Fuchs that therapy is as good as powerless against sympathetic ophthalmia, once it has broken out. On the whole however one need hardly quarrel with an authority who was right as often as was Professor Fuchs. Dr. Brown in following the word of the master as something almost sacred has rendered English-speaking ophthalmologists a signal service.

**Text Book of Ophthalmology.** By W. Stewart Duke Elder, M.A., D.Sc., M.D. Surgeon Royal London Ophthalmic (Moorfields) Hospital. Vol. I. The Development, Form and Function of the Visual Apparatus. Cloth. Price \$15. Pp. 1124 with 1029 illustrations. St. Louis, C.V. Mosby Company, 1933.

In the past, textbooks in ophthalmology have been written to appeal to both the undergraduate student and the graduate. This volume is a textbook which offers at the end of each subdivision an adequate and thoroughly up-to-date bibliography sufficiently broad to enable one seeking further literary references to obtain the necessary clues. The first volume is entirely devoted to the fundamental sciences on which a thorough understanding of ophthalmology rests. It contains eight sections on the phylogeny of the visual apparatus, the anatomy and comparative anatomy of the visual apparatus, the ontogenic development of the visual apparatus, the physiology and biochemistry of the eye, optics, the physicochemistry of vision and the physiology of vision including visual sensations.

Owing to the size of the volume it is obviously impossible to discuss it in detail. The various sections are well written, give evidence of careful thought and judgment, present the modern proved concepts of the various subjects and cover ophthalmologic fundamentals in a way that is not even approached in any other single volume. For example, until Adler's book on physiology appeared within the past few weeks there was not a single volume anywhere that dealt with ophthalmic physiology in toto, but this textbook touches on all phases of the subject and gives the reader an insight into the physiologic work that to the average ophthalmologist is unknown territory.

This textbook is one of the best that has ever appeared in English. If the succeeding volume or volumes, as the case may be, maintain the high standard set by the first, English speaking ophthalmologists will not have to make such frequent reference to Teutonic literature as has been necessary in the past.

**Operative Surgery Covering the Operative Technique Involved in the Operations of General and Special Surgery.** By Warren Stone, Bickham, M.D., and Pharr, M.F.A.C.S. Junior Surgeon to Touro Hospital, New Orleans, and Calvin Mason Smyth, Jr., B.S., M.D., F.A.C.S., Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania. Volume VII. Cloth. Price \$10. Pp. 849 with 765 illustrations. Philadelphia & London: W.B. Saunders Company, 1933.

Eight years ago the first six volumes of this work were published. The present volume is an effort to bring the work up to date by adding those operative procedures which have in the last few years become established. The book does not describe every operation that has recently been disclosed but includes only the more important ones. Since anesthesia has developed rapidly within the last few years the opening chapters are on that subject giving special attention to paravertebral, splanchnic and spinal anesthesia to the rectal administration of ether and oil and to ethylene gas and its administration. Among others is a discussion on excision of the lobe of the lung on apicolysis for collapsing a tuberculous cavity and a description of operations for removal of intrathoracic tumors and for repairing a hernia of the lung. There are chapters on operations on the heart, on the intestine and on the urinary tract on the prostate and the seminal vesicles, for undescended testicle on operations on the blood vessels and sympathetic nervous system on ganglions, a chapter on suture and ligature materials and one on the postoperative care of surgical patients. The volume is well illustrated. It closes with an index to volume VII and a separate general index to volumes I to VI.

**Cardiovascular Pain as a Biochemical Problem.** By Gordon Lambert, B.A., M.D., B.C. Senior Hon. Physician and Physician in Charge of Electrocardiographic Department, Royal Berkshire Hospital. With a foreword by Maurice Alan Cassidy, C.B., M.A., M.D., Physician Extraordinary to H.M. The King, Boards. Price 6s. Pp. 75 with 23 illustrations. London: H.K. Lewis & Company, Ltd., 1933.

Lambert makes no claim that he has settled the question of anginal or, as he prefers to call it, cardiovascular pain. His object is to show the weak spots in the prevailing theories and to urge a greater concentration of investigation on the possibility or the probability, of a chemical explanation. He asserts that investigations based on morbid anatomy have not solved the problem though he does not go so far as to rule out pathologic conditions of the heart and aorta as having something to do with the production of pain. The logic of the author is often loose. His pages contain too frequently such expressions as 'impression', 'suspicion', 'assumed', 'one ventures to suggest', 'doubtless', 'perhaps'. In other words there is a lack of proof based on clinical, anatomic or laboratory facts that seriously detracts from the value of the work. One may agree with the laudable desire to stimulate study directed along biochemical lines but such work must be done in a more scientific manner than that manifested in the writing of this monograph. The expressed and veiled criticisms contained in the foreword by Maurice Alan Cassidy are sensible and to the point.

**Medizinische Praxis. Sammlung für ärztliche Fortbildung.** Herausgegeben von Prof. Dr. L. R. Grote, Chefarzt der C. von Noorden Klinik, Frankfurt a. M., Prof. Dr. A. Fromme, Direktor der chirurgischen Abteilung des Städtischen Krankenhauses Dresden-Friedrichstadt, und Prof. Dr. K. Warnekros, Direktor der Städtischen Frauenklinik zu Dresden. Band VI. Chirurgische Tuberkulose. Von Dr. med. Max Flesch, Thebesius, leitender Arzt der chirurgischen Abteilung am Privatkrankenhaus Sachsenhausen, Frankfurt a. M. Mit einem Geleitwort von Prof. Dr. V. Schmieden, Direktor der chirurgischen Universitätsklinik Frankfurt a. M. Paper. Price 15 marks. Pp. 194 with 58 illustrations. Dresden & Leipzig: Theodor Steinkopf, 1933.

The monograph 'Surgical Tuberculosis' by Dr. Flesch-Thebesius is one of a series of medical monographs comprising *Medizinische Praxis*. This book deals especially with bone and joint tuberculosis. Tuberculosis of the lungs, abdomen and genito-urinary tract are covered in other monographs. The author calls attention to the fact that formerly under the general heading of surgical tuberculosis were included those types of tuberculosis which were considered amenable to surgical treatment in short, surgery of the bones, glands, intestine

and genito urinary system in contradistinction to tuberculosis of the lungs, in which surgery was presumably of no avail. With the improvement in methods of conservative treatment, tuberculosis of the bones and joints is rapidly becoming the nonsurgical type of tuberculosis, while at the same time the improvement of surgical collapse therapy has changed the treatment in pulmonary tuberculosis from medical to surgical in a large proportion of cases. The author of this book on surgery of the bones and joints feels that both medical and surgical treatment have their place. He has, however, retained for the title of his work the old name surgical tuberculosis. He has derived his knowledge of the subject he is writing on from experience in the clinic, the sanatorium and private practice, and therefore he appreciates the advantages and the limitations of each of these three institutions. The book is written especially for the general practitioner and every effort is made to prescribe such therapy as the general practitioner can carry out. A particular point has been made in trying to answer some of the knotty questions frequently proposed to the man in general practice for example the relationship between trauma and tuberculosis of the bones and joints. These questions have been answered in a way that will help the general practitioner to reply to similar questions from his patients. The book is well illustrated is short and concise and will probably appeal to German speaking physicians either in industrial or in general practice.

**Flynn of the Inland** By Ion L. Idriess. With forewords by Sir Sidney Kidman and Ronald G. MacIntyre. C.M.G. O.B.E. D.D. Sixth edition. Cloth. Price 8/- Pp 306 with 35 illustrations. Sydney Australia. Angus & Robertson Ltd. 1932.

This is a true story entertainingly written of the great effort of John Flynn to serve the inhabitants of the sparsely settled inland empire of Australia. The lonely prospector the ranchman and the children of these people. That vast land of good country and poor awaits the release of untold mineral and agricultural riches its people are isolated in two tens and twenties, hundreds of miles from medical and spiritual aid. John Flynn dreamed of providing these settlers with some of the bare necessities of medical service. He spent years in the inland, coming out now and then to further the organization of the Australian Inland Mission and to lecture in cities to arouse interest in the welfare of these people. The mission established nursing homes and small hospitals. John Flynn has lived to see physicians summoned by radio and traveling great distances by airplane into the inland to attend these isolated people. A leaf from the diary of one of these flying doctors follows.

Flew 'bush to a locality where there was no landing ground. Advised patient's friends to take him by car to a meeting place thirty miles distant. Patient very ill but began to improve when we got him to Cloncurry Hospital.

Called by telephone two hundred and twenty three miles to baby with malaria fever. Quick flight.

Called by telephone one hundred and twenty miles found husband wife and two children under poor conditions in isolated situation. Parents simultaneously overcome by a melancholic form of insanity and had been found wandering at large in the bush. Advised removal to medical centre.

Called two hundred and twenty three miles. Bumpy flight. Saw woman suffering from malaria. Other cases baby two sick women aboriginal with septic hand Japanese with synovitis contusions of foot and leg.

Called one hundred and seventy five miles. Swift flight—clear day. Baby fifteen months acute enterocolitis (?) meningitis. Transported to hospital. Patient's condition apparently not adversely affected by flight.

Advised man by letter re tumor on face.

Advised Mornington Island by wireless re patient suffering from skin rash.

Heard of man suffering from fracture of humerus. Unable to go out owing to absence of pilot in Normanton. Advised taking patient to Burketown Hospital. Two days later flew to Burketown but patient had not arrived.

Advised Mornington Island by wireless—child suffering from epilepsy. Flew to Normanton on mail machine at request of local doctor who was absent. Good opportunity to demonstrate possibility of flying-doctor's co-operation. QANTAS generously gave complimentary ticket for trip.

John Flynn has been likened to Wilfred Grenfell, who has done similar things for the natives in the ice bound coast of Labrador. Like Grenfell Flynn has gone abroad to see what is being done for pioneers elsewhere. This book will interest people who live in large cities those who sometimes forget the stars and the moon and who sometimes fail to realize the value and interest of living in the great outdoors.

**Time to Live** Adventures in the Use of Leisure. By Gore Hambridge. Cloth. Price \$1.50. Pp 144. New York & London. Whittlesey House. McGraw Hill Book Company Inc. 1933.

Who would not appreciate more "time to live"? Who would not enjoy, in the words of the subtitle of this book, "adventures in the use of leisure"? The author has painted an alluring picture of what, to him, constitutes the "life of Riley." He is plainly one of those primitive souls to whom a routine is stifling, he prefers the adventure of uncertainty, even if it includes hardship, to the monotony of security. He abandons—in these times—a job and a pay-check and takes to freelance writing, a precarious occupation at any time, as he knew when he took the step. For persons with his tastes, the life he describes is ideal—far from the madding crowd, in bucolic surroundings, living the simple life for all it is worth and getting the last ounce of savor out of it. Of course, there are those to whom such a life would not appeal, who would feel as seriously bored in the rural scene as he felt confined and stifled in urban environment. Each to his taste. Regardless of the kind of surroundings a given person may prefer, there is much to be learned from Mr. Hambridge's plea that we take time to live, to play to enjoy handicraft, gardening, painting (even if we daub) and companionship of our loved ones. He would make life more of an art and less of a business. To him the five hour day and the five day week, or even less spell opportunity and time to live even if they may require us to lop off some of the so-called trimmings of civilization and get down to essentials, even to working again with our hands. Machinery is to him nothing more than an opportunity to get time for handicrafts. He paints a fascinating picture. We know that we ought to take his advice, but probably we shall just pass a delightful hour reading and approving his philosophy and then with a sigh go back to the same old treadmill.

**A Further Study of Dental Clinics in the United States** By Miriam Simons Leuck of the Research Staff of the Committee on the Study of Dental Practice of the American Dental Association. Statistical Adviser Charles A. R. Wardwell Assistant Professor of Statistics and Finance Northwestern University. Publications of the Committee on the Study of Dental Practice of the American Dental Association No. 4. Paper. Price \$1.50. Pp 178. Chicago University of Chicago Press. 1932.

This publication of the Committee on the Costs of Medical Care presents an analysis of clinics for the care of the teeth in association with hospitals, industries, schools and dental schools. Most of the information contained was developed by the questionnaire method. It is recognized that dentists in private practice are confronted with the same problems that concern physicians so far as relates to the operation of dental clinics. Because the information developed is rather inadequate the book serves largely merely to indicate the nature of the problem and its extent without offering opportunity for definite conclusions. Apparently there are 1,933 dentists employed in various dental clinics. They work for salaries, although in large clinics much of the service is donated by volunteers. Most dental clinics are, of course, located in metropolitan centers. In these clinics there is an additional thousand employees who are not trained as dentists but who aid in the work. During 1930 the clinics cared for approximately a million and a half of people. The clinics seem to be increasing at a rate which will involve the treatment of three million patients in 1938. All types of dental service are rendered. It is found that dentists working for clinics have median net earnings of approximately \$2,848.00 a year, or \$1,246.00 less than that of a median dentist in private practice.

**Studies on the Nutritive Value of Milk. II The Effect of Pasteurization on Some of the Nutritive Properties of Milk** By W. E. Krauss, J. H. Erb and R. G. Washburn. Bulletin 518. Paper. Pp 23 with 8 illustrations. Wooster Ohio. Agricultural Experiment Station. 1933.

This bulletin includes a review of the literature and the experimental procedure followed in the study of the effects of raw and pasteurized milk on anemia development, growth and calcification in albino rats and the influence of pasteurization on vitamins A, B, D and G and curd tension. Albino rats developed nutritional anemia at the same rate when fed exclusively on raw or pasteurized milk. No loss of iron or copper occurs during pasteurization of milk. When milk fortified with copper and iron exclusively to eliminate the anemia factor is fed, no significant difference is apparent in the total

nutritive effect of raw or pasteurized milk. The calcium and phosphorus in the two forms of milk are equally available. Pasteurization does not affect vitamins A, D and G but does destroy at least 25 per cent of the vitamin B originally present. Pasteurization slightly reduces the curd tension of milk. The nutritive deficiencies of pasteurized milk, vitamins B and C, can be readily overcome by proper dietary control. The continued use of pasteurized milk offers no serious problem from the human standpoint.

**Diseases of the Eye Practitioner's Series** By Andrew Rugg Gunn M.B. F.R.C.S. Surgeon to the Western Ophthalmic Hospital, Cloth Price 12s 6d. Pp 188 with 34 illustrations. London: William Heinemann Ltd. 1933.

This brief textbook treats of ophthalmology from the point of view of familiarizing the physician with the essential diseases of the eye that he will be called on to take care of in the course of his daily routine. The subjects covered are essentially conjunctival inflammations, the commoner inflammations, iritis, syphilis of the eye, cataract, glaucoma, the commoner tumors of the eye, the type of retinitis seen with general disease, and the various ocular palsies. For the scope intended, the book is quite sufficient. It does not discuss refraction or surgery and for that reason it would not serve as a textbook for the beginning ophthalmologist. It compares favorably with similar books on the subject.

## Medicolegal

### Foreign Bodies and the Doctrine of Res Ipsa Loquitur

(Pendergraft v. Royster (N. C.) 166 S. E. 285)

The plaintiff sued the defendant alleging that after an operation he left in her body a glass drainage tube which had been broken or at the time of dressing her wound used gauze packing which had embedded in it broken pieces of a glass tube, which, on the removal of the packing, were allowed to remain in her body. The defendant had operated on her, Jan. 24, 1929, to cure certain conditions among them a misplaced uterus and lacerations of the cervix. According to her testimony, she made a good recovery and was well satisfied with her condition when, on or about April 28, next following the operation, while she was working in her garden, a pain struck her, seemingly, she said, in the very bottom of my stomach. She sat on the edge of a chair, placed her finger on the mouth of her womb, felt a foreign substance there and with difficulty removed it. It was, she testified, a piece of glass almost an inch long with jagged ends, and it looked like it had been part of a tube. Her husband said it was part of a glass tube and the end tapered like a pen point. About a month later, plaintiff testified, a piece of glass was discharged at the time of menstruation, and three or four more times during the year following the operation pieces of glass came away. So far as the published record shows, the plaintiff introduced no evidence to prove the presence in the operating room of a glass drainage tube at any time during the operation or to show the presence of glass on the gauze to be used for packing. The defendant, however, while denying the plaintiff's allegations of carelessness and negligence, said that in irrigating the site of the operation he used a glass nozzle attached to the end of a rubber tube. He was certain, however, that no part of the nozzle had been broken off. He denied that there was any glass in the gauze which he had used. He was unable to account for the presence of glass in the plaintiff's body. Catgut comes in little glass tubes, he testified, but the tubes are broken by nurses before the operation is started. If an extra supply is needed in the course of an operation, a tube may be broken in the operating room, but it is not broken around or near where there is gauze for packing. It is broken at a different table on the opposite side of the room. These tubes are broken between layers of towels or layers of gauze, and if gauze is used it is thrown into the waste basket. If there had been any glass on any of the gauze used for packing, any one using the gauze would have seen the glass and would not have used the gauze. A tube containing catgut was broken in the presence of the jury, and the plaintiff selected a piece of

the broken tube, which, she testified, corresponded very closely to the piece of glass that she took from her body. The correctness of the defendant's procedure in the course of the operation, its conformity to standard good practice in the community where the operation was done, and the improbability of glass having been introduced into the uterus in the course of the operation and remaining there as long as was alleged in this case, were testified to by expert witnesses appearing on behalf of the defendant. Judgment was given in favor of the patient, however, and the defendant appealed to the Supreme Court of North Carolina.

No presumption of negligence, said the Supreme Court, arises from a physician's error of judgment in the diagnosis of a case or from his failure to cure, or to accomplish results as good as some one else might have accomplished, except where there is manifest such obvious gross want of care and skill as to afford, of itself, an almost conclusive inference of negligence. *Slimak v. Foster*, 138 A. 153, *Donahoo v. Lovas*, 288 P. 698. In such cases, neither affirmative proof of negligence nor expert testimony as to the defendant's want of skill need be given on behalf of the plaintiff. The proved facts are accepted as a sufficient basis for a presumption of negligence, under the doctrine of *res ipsa loquitur*. The casualty itself and the circumstances surrounding it may furnish all the proof that the injured person is able to offer or that it is necessary to offer. Where the injury is received while the patient is unconscious, the doctrine of *res ipsa loquitur* is commonly held to apply, because under such circumstances the patient is unable to testify as to what happened, whereas the physician can do so. *Herzog's Medical Jurisprudence*, section 187 note, 162-163. In operations like the present one, the patient is unconscious, and if the doctrine of *res ipsa loquitur* did not apply, the patient would be without a remedy.

The defendant, however, contended that the application of the doctrine of *res ipsa loquitur* was not justified in the present case, because he had denied that the alleged injury to the patient had been caused by glass left in the operation wound. Before the doctrine became applicable in this case, he contended, the patient had to prove her alleged injury had been so caused. This contention, however, the Supreme Court rejected, quoting with approval from the charge given to the jury by the trial court:

Where a thing which causes injury is shown to be under the management of the defendant and the accident is such as in the ordinary course of things does not happen if those who have control and management of it use the proper care, it furnishes or would be some evidence, in the absence of explanation of the defendant that the accident arose from want of care. The principle of *res ipsa loquitur* (which means the thing speaks for itself) in such cases carries the question of negligence to the jury, not however relieving the plaintiff of the burden of proof and not raising any presumption in her favor but simply entitles the jury in view of all the circumstances and conditions as shown by the plaintiff's evidence to infer negligence and say whether upon all the evidence the plaintiff has sustained her allegation.

Although the defendant and his witnesses contended that the injury alleged could not have occurred in the manner claimed by the plaintiff, the issue was a matter of fact to be determined by the jury. The evidence adduced was sufficient to be submitted to the jury, and the jury, not the court, are the triers of disputed facts.

The judgment in favor of the patient was affirmed.

## Society Proceedings

### COMING MEETINGS

- American Association of Railway Surgeons Chicago August 10-12 Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
- Idaho State Medical Association Yellowstone National Park August 6-8 Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
- Maine Medical Association Poland Spring June 26-28 Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.
- Montana Medical Association of Anaconda July 12-13 Dr. E. G. Balsam, Box 88, Billings, Secretary.
- National Tuberculosis Association Toronto, Canada June 26-30 Dr. Charles J. Hatfield, Seventh and Lombard streets, Philadelphia, Secretary.
- Pacific Coast Oto-Ophthalmological Society San Francisco June 28-30 Dr. F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.
- Western Branch Society American Urological Association Vancouver B. C. August 3-5 Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below

#### Annals of Internal Medicine, Ann Arbor, Mich

6 1013 1124 (Feb) 1933

- Anatomy of Autonomic Nervous System with Especial Reference to Innervation of Skeletal Muscles and Blood Vessels. S W Ranson. Chicago.—p 1013
- Functional Organization of Involuntary Nervous System and Its Humoral Mediators. W B Cannon. Boston.—p 1022
- Autonomic Control of Heart, Lungs and Bronchi. H L Alexander. St. Louis.—p 1033
- \*Results of Sympathectomy in Treatment of Peripheral Vascular Diseases. Hirschsprung's Disease and Cord Bladder. A. W Adson. Rochester Minn.—p 1044
- Pathologic Differentiations in Bright's Disease. Jean Oliver. Brooklyn.—p 1069
- Science and Practice in Bright's Disease. T Addis. San Francisco.—p 1077
- \*Etiology and Pathogenesis of Hepatic Cirrhosis. T L Althausen. San Francisco.—p 1080
- Aleukemic Myelosis with Osteosclerosis. D J Stephens and J F Bredek. St. Louis.—p 1087
- \*Some Unusual Cardiac Complications of Hyperthyroidism. Report of Four Cases. C. Smith and H C Sauls. Atlanta Ga.—p 1097
- Pneumomycosis and Amyloidosis. Report of Case of Asymptomatic Pulmonary Sclerosis and Amyloid Kidney. Death from Uremia. J B Carey. Minneapolis.—p 1106

**Results of Sympathectomy**—Adson feels confident that sympathectomy, in its various forms will continue as a means of treatment in conditions of dysfunction of blood vessels, smooth muscle and glands. Progress in this field requires the cooperation of the anatomist, the physiologist and the clinician. It would be unwise for the surgeon to attempt operations on the sympathetic system unless he is thoroughly familiar with the anatomy. Most satisfactory results have been accomplished by sympathetic ganglionectomy and trunk resection in the treatment of peripheral vascular diseases such as Raynaud's disease, thromboangiitis obliterans with vasomotor spasm of the collateral arteries, acral scleroderma developing subsequent to Raynaud's disease and periarticular arthritis in the hands and feet associated with vasospastic phenomena of cold, clammy, pale and cyanotic extremities. The sectioning of sympathetic fibers to the internal sphincter muscles of the rectum and bladder, and of sympathetic fibers carrying inhibitory impulses to the large intestine and to the detrusor muscles of the bladder, has materially aided the expulsive forces of both the rectum and bladder, thus offering assistance in the treatment of congenital megacolon and cord bladder.

**Hepatic Cirrhosis**—Althausen states that the earliest lesions leading to experimental cirrhosis of the liver are always found in the hepatic parenchyma. Any toxic agent causing necrosis of the parenchymatous cells of the liver will on repeated administration produce cirrhosis of this organ. He discusses alcohol and inert colloids as etiologic factors in cirrhosis. Following necrosis of hepatic tissue regeneration of parenchyma and proliferation of the framework of the liver take place. The relative prominence of these two processes as well as the dose of the toxin and its chemical nature, determine the clinical and pathologic end picture of cirrhosis. The unitary conception of the genesis of the various types of cirrhosis of the liver furthers earlier recognition and treatment of this disease by focusing attention on the toxin involved.

**Cardiac Complications of Hyperthyroidism**—Smith and Sauls present the histories of four patients with hyperthyroidism and unusual cardiac complications. It is necessary to suspect hyperthyroidism in some patients with heart disease. To suspect thyrotoxicosis in the absence of physical signs is essential in making a diagnosis in these obscure cases. Attempts should be made to elicit a history of nervousness, palpitation

of the heart, loss of weight diarrhea of inexplicable origin, excessive sweating premature gray hair, preference of cold to hot weather, and familial occurrence of hyperthyroidism. On close questioning, a history of hyperthyroidism with a spontaneous remission many years before may be obtained. In treating these patients, iodine should almost never be given unless plans for operation have been made. Preoperative preparation should consist of complete rest in bed, forced feedings and large doses of sedatives. After from ten to fourteen days of iodine administration the patient's general condition will usually be much improved and the metabolic rate consequently greatly reduced. Operation can then be performed without difficulty.

#### Journal of General Physiology, Baltimore

16: 559 732 (March 20) 1933

- Ultrafiltration II Bound Water (Hydration) of Biologic Colloids. D M Greenberg and M M Greenberg. Berkeley Calif.—p 559
- Similarity of Kinetics of Invertase Action in Vivo and in Vitro. III. J M Nelson and B G Wilkes. New York.—p 571
- Experimental Comparison of Different Criteria of Death in Yeast. O Rahn and Margaret Noble Barnes. Ithaca, N Y.—p 579
- Electrokinetic Phenomena XI Action of Uni Univalent Electrolytes on Electric Mobility of Proteins. H A Abramson. New York.—p 593
- Osmotic Relationships in the Hen's Egg. J M Joblin. Nashville Tenn.—p 605
- Crystalline Pepsin V Isolation of Crystalline Pepsin from Bovine Gastric Juice. J H Northrop. Princeton N J.—p 615
- Process of Phagocytosis. Agreement Between Direct Observation and Deductions from Theory. Emory B H Mudd and S Mudd. Philadelphia.—p 625
- Characteristics of Ultrafiltrates of Plasma. R C Ingraham C Lombard and M B Visscher. Chicago.—p 637
- Effect of Cyanide and of Variation in Alkalinity on Oxidation Reduction Potential of Hemoglobin Methemoglobin System. R D Barnard. Chicago.—p 657
- Stimulation by Mineral Acids. Hydrochloric, Sulphuric and Nitric in Sunfish Eupomotis. W H Cole and J B Allison. New Brunswick N J.—p 677
- Specific Nerve Impulses from Gustatory and Tactile Receptors in Catfish. H Hoagland. Worcester Mass.—p 685
- Electrical Responses from Lateral Line Nerves of Catfish. I H Hoagland. Worcester Mass.—p 695
- Quantitative Analysis of Responses from Lateral Line Nerves of Fishes. II H Hoagland. Worcester Mass.—p 715

#### Military Surgeon, Washington, D C

72: 93 188 (Feb) 1933

- Use of Anticollibacillary Serum in Surgery. Hyacinthe Vincent.—p 93
- Cholecystectomy and Its Physiopathology. A Gonzalez Cosio.—p 104
- Medical Activities of Panama Canal. W P Chamberlain.—p 108
- Modification of Thomas or Keller Traction Splint. C M B Gilman.—p 125
- What a Dental Officer Ought to Know When Entering Service. F M Dimas Aruti.—p 127
- Diabetes. Simplified Management in Small Military Hospitals. H C. Michie.—p 130
- Carlisle Hallmark Loyalty. H H Rutherford.—p 141

#### Radiology, St. Paul

20: 69 154 (Feb) 1933

- Method for Localization of Foreign Bodies in the Eye. R Kegerreis. Chicago.—p 69
- Roentgen Diagnosis of Lesions in the Small Intestine. H W Soper. St. Louis.—p 76
- Roentgen Therapy in Arthritis. New Aspects and Technique. H Langer. Pittsburgh.—p 78
- Roentgen Ray Exploration (Diagnosis) of Pelvic Viscera with Aid of Iodized Oil. J J Eisenberg. Milwaukee.—p 86
- Experimental Clinical Research Work with Roentgen Ray Voltages Above Five Hundred Thousand. Preliminary Statement. A. Soland. Los Angeles.—p 99
- Studies of Effect of Roentgen Rays on Healing of Wounds. II Histologic Changes in Skin Wounds in Rats Following Postoperative Irradiation. E. A Pohle and G Ritchie, Madison Wis.—p 102
- \*Diagnosis and Roentgenologic Evidence in Spondylolisthesis. H W Meyerding. Rochester Minn.—p 108
- Plastic Surgery of Hip. A B Gill. Philadelphia.—p 120
- Advantages and Disadvantages of Small Chamber Measuring Instruments. Analysis of Back Scattered Radiation. H B Hunt. Omaha.—p 128
- \*Prevention and Treatment in Cervical Uterine Cancer. F I Shroyer. Dayton Ohio.—p 136
- Foreign Body Accidents in Children. Diagnosis and Treatment. L H Clerf. Philadelphia.—p 142
- \*Diagnosis of Uterine and Tubal Pathology Using Lipiodol. A T Harris. Sheldon Iowa.—p 146

**Diagnosis in Spondylolisthesis**—Meyerding states that, of the 207 patients with spondylolisthesis examined at the Mayo Clinic, 64 per cent were hard-working people. Their average age was 40 years, and 71 per cent were men. The principal

complaint was backache of almost nine years duration. Although many patients had consulted physicians, and roentgenograms had been made, less than 10 per cent had been given a diagnosis. Symptoms are relieved by rest but hard work, especially stooping and lifting aggravate them. The patient may appear well and be gaining in weight. The anteroposterior roentgenogram may appear to be negative. Malingering may be suspected when the subluxation is slight and discernible only in lateral roentgenograms. Clinical signs vary with the degree of deformity. A typical example discloses depression or lordosis of the lumbar spinous processes with prominence of the fifth lumbar spinous process and the sacrum. This region was involved in 86 per cent of the cases. With increased subluxation shortened torso and broadened pelvis occur. Motion of the spinal column is principally limited on forward bending. Although trauma is significant as an etiologic factor, it may be difficult to prove. The history and clinical data when substantiated by evidence of fracture in the roentgenogram, are conclusive. Symptomless spondylolisthesis occurred in 9 per cent of the cases. A hard bony mass is sometimes palpable low in the abdomen. Rectal examination, protoscopic or manual, may disclose a narrowed anteroposterior diameter of the pelvis. In about 2 per cent of the cases the spondylolisthesis was of the reverse type. Congenital anomalies were present in a high percentage of cases. Spondylolisthesis is seldom recognized in general practice. It is obviously associated with chronic backache. Roentgenologists may disclose its presence in spite of negative clinical data. One may look forward to an increasing incidence of this deformity in cases of chronic backache and injury to the spinal column as a result of the more common use of lateral roentgenograms of the lumbosacral area.

**Prevention and Treatment in Uterine Cancer**—Shroyer believes that the majority of women complaining of nervous disorders, general tiredness, backache, mental irritation, leukorrheal discharge, constipation and palpitation of the heart are affected by toxic poisons generally from the pelvic organs. These patients usually have a congested liver and will feel better at once if given mercurous chloride followed by magnesium sulphate next morning. All cancer patients present these complaints and frequently admit that they have been getting worse each year. The author has seen patients who have been treated for heart disease for several months. When they are examined (and thyroid disease is absent) often the real underlying cause has proved to be a lacerated cervix with accompanying gallstones. Why should not these patients develop cancer with such bombardment of bacterial and chemical toxins? The intestinal tract should be cleaned up with proper foods and all points of infection and irritation should be removed. One should not wait and watch a condition to see what the outcome will be but should institute the most scientific treatment available. By doing so one will be able to prevent many an individual from becoming a victim of cancer. Total or subtotal hysterectomy should never be performed for menorrhagia. Radium will cure these cases, it not only destroys cancer cells but kills the infection present. If the hemorrhage is not corrected operation is in order after several irradiations and few patients will die following the operation. The author irradiates all myomas and fibroids except those that are pedunculated and calcified, and, if necessary, he operates two or three months later.

**Diagnosis of Uterine and Tubal Pathologic Disorders**—Harris points out that, in the more obscure uterine and tubal pathologic changes, the most successful means of establishing a diagnosis, without resorting to laparotomy with its dangers and discomforts is through the use of iodized oil to assist in the roentgenographic visualization of the organs of reproduction. Iodized poppy-seed oil is ideal in that there are no contraindications—no open blood channels such as are seen in malignant conditions and menorrhagia. He concludes that uterosalpingography is an unrivaled means of establishing a diagnosis of uterine and tubal abnormalities that cannot be detected with any degree of certainty except by laparotomy and is an accurate means of diagnosing the cause, or causes, of sterility in women otherwise normal and having normal husbands. Uterosalpingography is a most useful aid in establishing with certainty, with little or no risk to either the mother or the embryo, the presence of the earliest stages of pregnancy.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Journal Obst and Gynec of Brit. Empire, Manchester

40:1 208 (Feb.) 1933

- \*Puerperal General Peritonitis. L. N. Pyrah and C. Oldfield.—p. 3
- Effect of Reproduction on Insanity. A. L. Robinson.—p. 39
- Simultaneous Intra Uterine and Extra Uterine Pregnancy. Two Cases. Review of Recorded Cases. A. A. Gemmell and the late H. L. Murray.—p. 67
- Birth Control Studies. III. Experimental Observations on Grafenberg Ring Contraceptive Methods. H. M. Carleton and H. J. Phelps.—p. 81
- Teaching of Practical Obstetrics. D. Dougal.—p. 99

**Puerperal General Peritonitis**—Pyrah and Oldfield state that puerperal general peritonitis is present in about one half of all patients who die from puerperal fever. In most of these cases it is the immediate cause of death. Puerperal peritonitis is caused in the majority of cases by the streptococcus and has been assumed to be almost uniformly fatal. The most severe cases arise within the first four days after delivery and follow the rapid invasion of the peritoneal cavity by organisms entering through the lymph node vessels in the wall of the uterus. There is often a blood infection and rarely any localized pelvic suppuration. General peritonitis occurring four days or later after delivery is less severe, and in these patients localized pelvic suppuration is most commonly found in the wall of the uterus and less frequently in the ovary and in the broad ligament. The peritoneal infection may arise either from the uterus itself or more often from the localized abscess. The authors outline other causes of peritonitis occurring in the puerperium and describe the symptoms and signs of acute puerperal general peritonitis. They urge that operation for cases in which puerperal peritonitis is reasonably suspected should be undertaken much more often than it has been in the past. The fully developed clinical picture must never be awaited if the present high mortality is to be reduced. Although diagnosis is always difficult, they think that most cases may be recognized before the peritoneum is widely affected. Cases of puerperal sepsis in which a palpable mass is present must be watched for signs of involvement of the general peritoneal cavity, and, if such an involvement is diagnosed, immediate operation must be performed. An abscess of the wall of the uterus is especially liable to be associated with general peritonitis. The authors report a series of thirty-six cases of puerperal general peritonitis, with recovery in eleven.

### Journal of Tropical Medicine and Hygiene, London

36:49 64 (Feb. 15) 1933

- Cardiac Complications of Ancylostoma Infection with Especial Reference to a Presystolic Murmur Occurring in These Cases. H. O. Gunewardene.—p. 49
- \*Note on Some Experiments on Action in Vitro of Normal Human Serum on Trypanosoma Brucei and T. Rhodesiense. J. F. Corson.—p. 53

**Experiments with Trypanosoma Brucei and T. Rhodesiense**—Corson records experiments made with two strains of Trypanosoma brucei and one strain of T. rhodesiense. The object of the experiments was to see if guinea-pig serum had any trypanocidal action on T. brucei. Shinyanga, if the serum of a rat that had previously resisted infection with T. brucei. Natal was trypanocidal to it, and if the strain of T. rhodesiense, freshly isolated from man, was resistant to human serum. It was found that the guinea-pig serum had no apparent trypanocidal action on T. brucei. Shinyanga and that the serum of the resistant rat also had no trypanocidal action on T. brucei. Natal. Both strains of T. brucei were susceptible to normal human serum, as was also the strain of T. rhodesiense. The resistance of guinea-pigs and of some white rats to the two strains of T. brucei does not seem to be connected with any trypanocidal action of their serum. The apparent susceptibility of the strain of T. rhodesiense to the serums of two native men belonging to an area free from trypanosomiasis, does not lead one to think that inoculation of the donors of the serum with the blood of the rat would fail to infect them. The little evidence that exists at present on this point is rather against that supposition but experiments on man would seem to be necessary to decide the question.

**Annales de Medecine, Paris**

33: 337-432 (April) 1933

- \*Hemorrhagic Pleurisy with Eosinophils in Primary Cancer of Lung  
Micropleurisy with Eosinophils L. Bernard and J. Marie.—p. 337  
Parathyreoprivous Tetany M. Labbé.—p. 349  
Value of Treatments of Exophthalmic Goiter J. Belot and Ledine.—  
p. 363  
New Research on Typhoid Immunity Typhoid Endotoxin and Antiendo-  
toxic Immunity J. Reilly, E. Rivalet, C. Launay and V. Stefanescu  
—p. 388

**Hemorrhagic Pleurisy with Eosinophils in Cancer of Lung**—Bernard and Marie affirm the existence, contrary to classic opinion, of hemorrhagic pleurisies with eosinophils during the course of primary cancer of the lungs. These neoplastic pleurisies with eosinophils present two varieties. In one type the pleurisy is abundant and the eosinophilia is distinct and is the only distinguishing feature characterizing this type of effusion. The other type is characterized by its insidiousness, the slight amount of the effusion, its enormous and transitory eosinophilia, its short duration and its aseptic nature. This micropleurisy with eosinophils, whether it is hemorrhagic or citrine, appears to translate a special process of aseptic reaction to the pleural serosa which may be realized by different causes, such as pulmonary neoplasia, acute pulmonary congestion, endocarditis, or pulmonary amebiasis.

**Gynécologie et Obstétrique, Paris**

27: 289-384 (April) 1933

- Syndrome of Grave Hypodiphenous Albuminuria During Gestation  
J. Voron and H. Pigeaud.—p. 289  
Genital and Extragenital Endometrioid Formations in Women H.  
Portes and P. Isidor.—p. 309  
\*Unexplained Sterilities Study of Ascent of Spermatozoa in Lower  
Genital Passages of Women J. Seguy and J. Vimeux.—p. 346

**Ascent of Spermatozoa in Genital Passages of Women.**—Seguy and Vimeux found that the acidity which normally exists in the vagina stimulates the spermatozoa and increases their oscillations, but it also shortens their existence so that, contrary to accepted opinion, those which do not leave the vagina rapidly are killed. The cervical content is always alkaline and strongly attracts the spermatozoa, which cannot penetrate the orifice of the cervix unless it contains an abundant quantity of a glairy, fluid, transparent secretion. The glairy secretion that makes the cervix permeable is physiologic and temporary and is probably linked to the phenomenon of ovulation. It may appear at different periods of the menstrual cycle and its duration is variable. In most women this permeable glairy secretion is present only once during the menstrual cycle, it appears about the tenth day after the beginning of the previous menstrual period and lasts from four to five days. In some women the cervix is never physiologically permeable to spermatozoa because there is no secretion, because it is too scanty or because it is purulent. These facts make it possible to understand certain cases of unexplained sterility.

**Prensa Médica Argentina, Buenos Aires**

20: 679-714 (March 29) 1933 Partial Index

- New Apparatus for Treating Fractures of Lower Extremities by Con-  
tinuous Extension of Fractured Leg Utilizing Well Leg for Counter  
action R. Sole.—p. 679  
Role of Pulmonary Hyperventilation in Parathyreoprivous Tetany  
G. Martino.—p. 685  
\*Streptococcic Septicemia with Port of Entry in Genital Organs Cau-  
sing Encephalitic Syndrome Case E. A. Beretervide and J. J.  
Reboiras.—p. 686

**Streptococcic Septicemia with Port of Entry in Genital Organs**—Beretervide and Reboiras state that streptococcic septicemia has a sudden onset with chills, high fever, intense headache, nausea and vomiting associated with a nervous syndrome, which later is complicated with cardiac disturbances. The blood presents a typical picture with leukopenia, granulocytopenia and bacteremia. Endocarditis is the most frequent and the gravest complication. Streptococcic septicemia varies with the character of the infection. Benign forms are rare and may be cured. The differential diagnosis is made with typhoid, acute tuberculosis, undulant fever, malaria and other forms of septicemia. Fixation abscess and the treatment of local foci of infection are the most promising therapeutic methods. Transfusion and immunotransfusion may give satisfactory results but serums and vaccines do not. The authors' patient aged 12 presented a syndrome of encephalitis with mental confusion and

delirium. An intense suppurative vulvovaginitis of infectious origin and of long duration proved to be the source of the streptococcic septicemia. The infection that originated the vulvovaginitis was typhoid, from which the child had suffered some years before the actual disease. Eight days of treatment of the vulvovaginitis with methenamine intravenously and orally produced a great improvement in the patient's general condition. The mental confusion, tachycardia, hypertonia and fever still persisted, although slightly modified. No nervous symptoms were observed after two months of treatment. The cardiac complications, represented by insufficiency of the mitral valve, seemed to be a permanent sequel. Multiple small subcutaneous abscesses appeared in different parts of the patient's body.

20: 715-794 (April 5) 1933 Partial Index

- Cyanosis of Black Cardiacs with Azyer's Disease. M. R. Castex  
and E. L. Capdehourat.—p. 715  
\*Gastric Aleukemic Lymphomatosis in Children Case. R. Cibils  
Aguirre, D. Brachetto, Brian and J. J. Murtagh.—p. 734  
Linitis Plastica of Scirrhus Cancer Type Case. A. V. Di Cio and  
A. Magg.—p. 753  
\*Treatment of Constipation by Resection of Lumbar Sympathetic. J.  
Diez.—p. 767

**Gastric Aleukemic Lymphomatosis in Children.**—Cibils Aguirre and his collaborators state that the development of gastric tumors during childhood is rare. They report a case of aleukemic lymphomatosis localized in the stomach of a child, aged 12, in whom the diagnosis was made during the life of the patient. At first a clinical diagnosis of either Pott's disease or neuropathy was erroneously made. A diffuse gastric tumor, the nature of which could not be determined, although its roentgen characteristics were similar to those given by gastric cancerous tumors, was discovered by roentgen examination. At operation a diffuse gastric tumor with great lymphatic infiltration was found. The tissues of the stomach were friable, making impossible any attempt at performing a gastrectomy or gastroenterostomy. An ileostomy was performed. The authors' case is the first in the literature in which an extensive roentgen study of the disease has been reported. There are no typical roentgen characteristics of lymphoblastoma. Nevertheless, the authors say that some writers attach importance to the persistence of peristalsis to indicate the presence of gastric lymphoblastoma, as differentiated from carcinoma, in which peristalsis disappears, that a differential diagnosis between gastric lymphoblastoma and gastric polyposis may be made by pneumogastroenterography, and that the roentgen aspect of lymphoblastoma shows a moderate infiltration of the tissues if compared with the more destructive character of lymphosarcoma. The differentiation of the nature of gastric tumors by roentgen examination is important because on this differentiation depends the nature of the treatment (surgical or roentgen) to be used. Roentgen irradiation has a favorable action on gastric lymphoblastoma. The authors advise making a revision of the clinical conception and terminology of gastric aleukemic lymphomatosis to establish a more proper and clearer classification in relation to the anatomic and hematologic aspects of the disease.

**Treatment of Constipation by Resection of Lumbar Sympathetic.**—Diez states that surgery of the sympathetic nervous system has great advantages over other surgical methods used heretofore for the treatment of constipation. The technique of the operation is simple. The author follows the extraperitoneal route of approach. The superior and inferior sections of the sympathetic lumbar nerve are made at the level of the first and fourth lumbar vertebrae, respectively. Whether the sympathetic lumbar nerve is sectioned at the right or at the left side, the results of sympathectomy are the same, since the sympathetic innervation of each segment of the intestine is bilateral. The aim of lumbar sympathectomy is to cause the surgical destruction of the sympathetic nervous fibers, which cause the functional inhibition of Auerbach's plexus, and to leave intact the parasympathetic nervous fibers, which stimulate the functions of the same plexus. The complete predominance of parasympathetic over sympathetic influences in Auerbach's plexus produces increased peristalsis of the distal segment of the colon, increased tonus of the intestinal musculature and diminished control of the internal sphincter of the anus, all of which result in the correction of constipation. The functions of the colon are not modified immediately after the operation. Spontaneous evacuation appears from six to eight days after

the operation, and the daily evacuation is normal from twenty to thirty days after the operation. The size and length of the colon decrease slowly but continuously so that three months after the operation roentgen examination shows the favorable modifications which the organ has undergone as a result of the operation. Copremia and the painful symptoms of the right segment of the colon disappear with the disappearance of constipation and the patient shows marked improvement. If no satisfactory results are obtained from unilateral lumbar sympathectomy, it is advisable to repeat the operation on the opposite side, since it is simple and does not endanger the patient in any way. The shock caused by the operation is not greater than that caused by any other surgical intervention such as appendectomy. The operation is performed in about twenty minutes. While other methods previously reported for the correction of constipation aimed at correcting only the anatomic abnormality coexistent with the pathologic condition by suppressing the functions of the pathologic organ or by removing the organ sympathectomy aims directly at correcting the disequilibrium that exists between the sympathetic and parasympathetic influences governing the functions of the organs, without altering or removing the pathologic viscera.

### Archiv für Gynäkologie, Berlin

153 181 358 (April 21) 1933

- \*Isolation and Demonstration of Hormone of Parathyroids in Blood of Pregnant Women F Hoffmann—p 181
- Resorption and Assimilation of Food Protein in Gestating Organism O Bokelmann and W Scheringer—p 201
- Röntgenologic Differential Diagnosis Between Luxation of Hip Joint and Traumatic Epiphyseolysis in New Born Infants H O Kleine—p 213
- Decidual Formation and Embryonal Traces of Cervical Glands in Vagina with Clinical Aspects of Vaginal Polypoidosis H Zacherl—p 224
- Occurrence of Male Sex Hormone in Urine of the New Born and in Placenta H Goecke P Wirz and H Daners—p 233
- Demonstration of Thyroid Hormone in Blood of Menstruating and of Pregnant Women C Müller—p 244
- Irradiation of Ovaries and Impairment of Offspring as Histologic Problem P Caffier—p 252
- Cured Arrhenoblastoma with Subsequent Pregnancy Ovarian Tumors with Hormone Action E Sedlacek—p 276
- \*Observations in Therapy of Irregular Functions of Ovary and of Anterior Lobe of Hypophysis. N Louros—p 296
- Antefixation of Retroflected Uterus N Kakuschkin—p 305
- Polypoid Marginal Cystedons H Bachmann—p 311
- Rare Form of Granulosa Cell Tumor of Ovary So-Called Folliculoma Lipidique (Lecéne) W P Plite—p 318
- Solid Large Round Cell Carcinoma So Called Disgerminoma of Ovary Z von Szathmáry—p 333
- Changes in Vermiform Appendix in Case of Peritoneal Pseudomyxoma G von Nagy—p 330

**Hormone of Parathyroids in Blood of Pregnant Women.**—The starting point of Hoffmann's investigations was a number of clinical and experimental observations indicating increased functional activity of the parathyroids during pregnancy. He attempted to solve this problem by the direct demonstration of an increased content of parathyroid hormone in the blood of pregnant women. Since thus far the parathyroid hormone had been isolated only from the parathyroids, it was necessary to devise a new method for its isolation from the blood. The principle of the method is the separation of the active substance from the serum protein bodies by boiling with diluted solutions of hydrochloric acid and by subsequent filtration. Further refinement of the hormone is obtained by treatment with dilute solution of acetone and by precipitation with dilute solutions of trichloroacetic acid. The dry residue of this precipitate is further purified and following neutralization is dissolved in physiologic solution of sodium chloride for testing. A quantity of 100 cc of plasma yielded generally from 20 to 30 mg of the hormone as dry residue. The action of the preparations obtained from the blood of pregnant women was tested by determining its influence on the calcium content of the blood of dogs. The amount obtained from 75 cc. of plasma withdrawn during the last stage of pregnancy resulted in a comparatively rapid increase in the calcium content of the blood. In comparing the calcium mobilizing substance of the blood of pregnant women with the parathyroid hormone it was found that the two substances were identical not only in regard to their pharmacologic but also to their essential physical and chemical properties. In systematic tests on the parathyroid hormone content of the blood during pregnancy and during the puerperium it was found that the hormone was present in sufficient quantities for detection between the third and fourth months increased slightly up to

the eighth and was greatly increased at the end of pregnancy. During the puerperium the hormonal content decreased rapidly.

**Therapy of Irregularities of Ovarian and Hypophyseal Functions.**—Louros says that so many factors are involved in the abnormal function of the ovaries and of the hypophysis that it is frequently difficult to determine the efficacy or the failure of the hormone therapy. Observations on 700 patients with abnormal ovarian activity convinced him that there are certain prerequisites for the success of the hormone treatment. He found hormone therapy entirely valueless in the presence of abnormal anatomic conditions of the ovaries and of the uterus. Ovarian cysts, tumors of the uterine adnexa, chronic inflammations, adhesions and anomalies in the position of the uterus must first be corrected by surgical intervention before hormone therapy can be commenced. A persisting corpus luteum was found to be the cause of the abnormal ovarian function in some cases, and the author considers it noteworthy that a tuberculous process existed in the three patients in whom this was the case. He discusses the indications for hormone therapy. In irregularities of menstruation in which the rhythm and the cyclic character are still preserved but in which the duration and the quantity of the flow are subnormal, the ovarian hormone should be administered, provided the local anatomic conditions are normal or have been surgically corrected. The symptoms of abolished function, such as dizziness, headaches, hot flashes, palpitation of the heart, articular pains, cutaneous paresthesias, perspiration itching and psychic disorders, which may occur with or without the aforementioned menstrual disturbances, yield to ovarian hormone therapy as do also dyspareunia or sterility, provided there is no irregularity in the menstrual period. In menorrhagia, a local cause should always be searched for, the operative removal of which usually reestablishes the normal period, so that hormone therapy is not required in these cases. If the menstrual period is so irregular that the cyclic rhythm is no longer detectable, hypophyseal and ovarian preparations should be given after local disturbances have been ruled out. A pulmonary tuberculosis is a contraindication to any therapy that aims to reestablish the ovarian function, for in these cases the cessation of the menstrual flow is a compensatory action on the part of the organism. The author states that the oral administration of ovarian preparations is generally of little avail and he recommends that they be given intravenously. Hypophyseal hormone is administered intramuscularly. Treatment with calcium preparations proved a valuable adjuvant to hormone therapy, probably because of its action on the sympathetic

### Dermatologische Wochenschrift, Leipzig

90: 461 504 (April 8) 1933

- Neurotic and Hysteric Dermatoses. J Werther—p 461
- \*Short Wave Therapy in Gonorrheal Arthritis H Graf—p 470
- \*Forgotten Parasite (Trichosoma recurvum) as Cause of Creeping Disease B Solger—p 476
- \*Case of Probable Second Syphilis Infection in Spite of Continued Bismuth Therapy S Zetterholm—p 477

**Short Wave Therapy in Gonorrheal Arthritis.**—Graf points out that the short wave method introduced into medicine by Schliephake is acquiring a permanent place in the therapeutic armamentarium. It employs wavelengths of from 20 to 3 meters in the air condenser field, and some authorities refer to these waves as the "ultrashort." The author employed short waves of a length of from 19 to 14 meters, according to Schliephake's method in nine cases of gonorrheal arthritis, with rapid alleviation of the pains which in most cases disappeared entirely. The other manifestations of inflammation likewise decreased. The author recommends short wave therapy as an effective therapy of gonorrheal articular inflammations.

**Superinfection with Syphilis During Bismuth Therapy.**—Zetterholm relates the clinical history of a man aged 48, in whom, following renewed exposure to syphilis, signs of a reinfection appeared in spite of the fact that he still received bismuth compounds. This observation induced the author to study the literature about reinfections. Among 630 cases he found only six in which reinfection took place during the treatment of the first infection. The antisyphilitic remedies used in these cases of unsuccessful prophylaxis were mercury preparations and arsphenamine. The author considers the reported case of interest in the discussion of the prophylactic value of bismuth and he also mentions one publication which reports that five prostitutes became infected in spite of prophylactic bismuth therapy.

**Deutsche Zeitschrift für Nervenheilkunde, Berlin**

130: 185-312 (March 29) 1933

- Genesis of Cerebrospinal Fluid and Permeability V Kafka—p 197  
\*Atypical Forms of Paralysis H Saethre—p 217  
Critical Remarks on Determination of Chronaxia in Human Subjects J D Achelis—p 227  
\*Traumatic Paralysis Without Characteristic Trauma and Their Estimation A Gallinek and O Hennig—p 248  
Cortical Production of Hertwig Magendie Phenomenon H Korbsch—p 262  
Causes and Significance of Cerebral Pressure in Cerebral Tumor O Pedersen—p 270  
\*Clinical Aspects of Extrapyramidal Attacks Complications Following Antirabic Vaccinations R Schindelmann—p 291  
Supplemental Report to Article on Some Unusual Cases of Multiple Sclerosis O Kleneberger—p 299  
Casuistic Contribution to Symptomatology of Purulent Meningitis H Glatzel—p 301

**Atypical Forms of Dementia Paralytica.**—Saethre points out that a negative Wassermann reaction in patients with untreated dementia paralytica is rare. Among 135 such patients, he observed four in whom the Wassermann reaction was negative in both the blood and the cerebrospinal fluid, three in whom the cerebrospinal fluid gave a negative reaction while the blood was positive, and one in whom the blood gave a negative and the cerebrospinal fluid a positive reaction. In all untreated Wassermann negative cases, the cerebrospinal fluid showed all the other symptoms that are typical for dementia paralytica, including the colloidal gold and mastic reactions. The author discusses particularly the four cases in which the Wassermann reaction was negative in both the blood and the cerebrospinal fluid. In one of these patients the characteristic symptoms of paralysis had existed for a year. The anamnesis revealed that a cerebrospinal fluid test had been done in another clinic nine months previously and had been found positive. Since the patient had received neither malaria therapy nor any other specific treatment, the change in reaction had developed spontaneously. In a second patient of this group, the Wassermann reaction of the serum had been positive a year before. The third patient was admitted to the clinic with new symptoms of dementia paralytica with a negative Wassermann reaction in both the blood and the cerebrospinal fluid but with otherwise typical paralysis symptoms. In the fourth patient, the Wassermann reaction had been negative in four tests performed in the course of six months. All other observations on the cerebrospinal fluid were indicative of a typical dementia paralytica. Because the anamnesis revealed no syphilitic infection, because the pupillary reaction was normal and because the Wassermann reaction was constantly negative the case was not diagnosed as dementia paralytica but an encephalitis or a polysclerotic dementia was assumed and the patient was sent to a hospital for mental diseases. Here the dementia, ataxia and paralysis of the lower extremities increased rapidly. The patient died from pneumonia four years after the beginning of the dementia. The postmortem examination revealed changes indicative of dementia paralytica. The author relates a peculiar case of paroxysmal megalomania ('psychic jacksonian attacks') in a patient with tabes who had undergone malaria therapy.

**Traumatic Paralysis.**—Gallinek and Hennig discuss types of paralysis that constitute a unit on the basis of their etiology and symptomatology and refer to paralyzes in the region of the plexus brachialis and of the plexus sacralis which usually develop suddenly during exertion. Frequently they are preceded by a hasty movement and develop only while the body is burdened that is, while carrying lifting throwing or catching a heavy burden. The trauma consists in an injury to the roots of the plexus by an unsuitable movement or by continuous vibration and simultaneous exertion, as is the case in the use of tools operating with compressed air and repeatedly pressed against the shoulder. The prognosis of the described types of paralysis is unfavorable.

**Extrapyramidal Attacks Following Antirabic Vaccinations.**—Schindelmann's case was that of a boy, aged 8 who had previously suffered from attacks (epilepsy). Two weeks after completion of antirabic vaccination there developed in addition to involuntary myoclonic movements of the facial and cervical muscles a peculiar disturbance of the walking function. A normally begun movement was arrested suddenly, and this disturbance was accompanied by a disordered static function (falling of the patient). Simultaneously with the somatic dis-

turbances, changes appeared also in the character and intellect of the patient. The disturbances observed in this case differ from those occurring in chronic encephalitis only in that they were not continuous but intermittent. Complications in the form of involvement of the central nervous system are comparatively rare in antirabic vaccination. The Leningrad institute reports only five cases in 40,000 vaccinations. Some authors consider the complications as mild cases of rabies while others ascribe them to a virus fixé. The author is inclined to believe that the condition of the nervous system has a certain influence on the development of the antirabic complications for the patient observed by him had previously been subject to attacks that probably produced a predisposition for epilepsy.

**Medizinische Klinik, Berlin**

29: 519-560 (April 14) 1933

- \*Diagnosis of Nephrolithiasis R Schmidt—p 519  
Hormone and Vitamin Actions and Their Interrelations E. Abderhalden—p 523  
Decrease in Syphilis and Change in Its Character W Kolle and K. Laubenheimer—p 525  
Microscopic Diagnosis from Duodenal or Duodenobiliary Sediments T Brugsch—p 527  
Winding Course of Arteries J Pal—p 530  
Diagnosis of Intermittent Gastric Volvulus W Stepp and F Kuhlmann—p 531  
Is There a Possibility of Detecting Septic Foci During Life? K Bingold—p 532  
\*Functional Examination of Lung O Klein and W Nonnenbruch—p 536  
\*Abdominal Wall Expulsion Reflex of Urinary Bladder Formerly Unknown Reflex of Therapeutic Value. H Schlesinger—p 538  
Acquired Hemolytic Icterus J Meieritz—p 539  
Modification of Physical and Chemical Heat Regulation by Cutaneous Application of Fat O Bruns—p 541

**Diagnosis of Nephrolithiasis.**—Schmidt emphasizes that the general practitioner should be able to diagnose concretum formation in the urinary passages from the symptoms without roentgenologic examination and without probing of the ureters. He thinks that the patient should be subjected to a specialized roentgenologic and urologic examination only after the diagnosis has been made or after there is considerable evidence for it. The author discusses some of the pathologic factors of nephrolithiasis, namely the pathogenesis the types of persons in whom it occurs most frequently and the disorders with which it often concurs. He describes the spontaneous pains those elicitable by pressure their irradiation character, time of occurrence and course, and the factors that elicit them. As accompanying manifestations he mentions disturbances in the evacuation of the urine, nausea, chills, pain and eventually swelling of the testes symptoms in the homolateral leg such as cramps or weakness in the muscles of the calf, inflation of the abdomen, tension in the abdominal walls, and fever. Discussing the signs of nephrolithiasis detectable in the urine, the author mentions the precipitation of crystalline sediments and the turbidity of the urine which, although not immediately connected with nephrolithiasis nevertheless frequently concurs with it and the occurrence of blood in the urine and oliguria. He advises palpatory examination of the kidney, auscultatory examination of the lumbar and flank regions, rectal and vaginal examination and examination of the abdominal reflexes.

**Functional Test of Lung.**—Klein and Nonnenbruch feel the lack of methods that permit a determination of the result of the pulmonary action namely, the arterialization of the blood. In trying to devise methods for this purpose, they had the following aims (1) to put the lung under conditions that represent a sort of tolerance test for the gas exchange in order to detect slight or latent disturbances, and (2) to detect objective values and to eliminate subjective factors. The first method described by the authors is a continuous control of the behavior of the oxygen saturation deficit in the arterial blood during and after short periods of nitrogen inhalation. The patient inhales nitrogen and by this a pure anoxemia without carbon dioxide stasis is produced. Blood is withdrawn from the radial artery before the nitrogen inhalation, at the end of seventy seconds of inhalation, and from twenty to thirty seconds after the inhalation. The three blood specimens are examined for oxygen deficit, oxygen capacity oxygen content and percentage of saturation. In patients without pulmonary and circulatory disturbances the anoxemia has disappeared again from twenty to thirty seconds after the nitrogen inhalation, and the oxygen deficit has decreased to its initial value. In patients with dis-

turbances of the lung, such as pulmonary stasis, emphysema, kyphoscoliosis and compression atelectasis, the anoxemia is nearly as pronounced at the third withdrawal of blood (from twenty to thirty seconds after inhalation) as at the end of the inhalation and the oxygen deficit is likewise practically unchanged. The authors discuss another test in which histamine is employed. By arterial puncture, blood is withdrawn for analysis, and 1 cc. of histamine is injected subcutaneously. The second withdrawal of arterial blood takes place from twenty to twenty-five minutes after the histamine injection and the third blood specimen is taken from forty to forty-five minutes after the injection. The deficit and capacity, the saturation and the content of oxygen are then determined in the blood specimens by means of gas analysis. If the pulmonary function is normal, the oxygen deficit either does not change under the influence of histamine or the change amounts to only from 0.5 to 0.7 volume per cent. Since the oxygen capacity is nearly always increased by the action of histamine patients with normal pulmonary function never show a reduction in the percental oxygen saturation and in the absolute oxygen content, even if there is a slight increase in the oxygen deficit. On the contrary, an eventual slight increase in the oxygen deficit is always more than compensated by the increase in capacity so that, in case of normal pulmonary function, there is always an essential increase in the percental oxygen saturation and in the oxygen content. In patients with disordered pulmonary function (emphysema, pneumothorax, compression atelectasis, pulmonary stasis) histamine injection always effects an increase in the oxygen deficit of more than 1 volume per cent and, generally, from 2 to 5 volumes per cent and there is always a decrease in the percental and generally also in the absolute oxygen content. The authors emphasize that, if the time is limited, the nitrogen method should be used but in the case of sensitive patients the histamine method should be employed.

**Expulsion Reflex of Urinary Bladder**—Schlesinger points out that the onset of micturition, particularly in men, is frequently accompanied by disturbances of micturition. Even if the prostate is normal the process of micturition may become impaired. The author found that by tapping or slightly rubbing the abdominal wall the onset of micturition can be accelerated. After apparent termination of the act a repetition of the described procedure produces a resumption of micturition a second and a third time, even when considerable pressure has been ineffective. After the third evacuation the reflex is as a rule abolished and can be produced again only after an interval of from one to three minutes. The time between the mechanical stimulation of the abdominal wall and the elimination of the urine is generally, from ten to twenty seconds but occasionally it may be longer. At the beginning of micturition the stimulation of the abdominal walls above the umbilicus seems to be most effective whereas if the bladder is only partly filled stimulation of the abdominal walls below the umbilicus seems to have a better effect. Occasionally the apparently terminated micturition can be resumed by tapping or rubbing lateral portions of the abdominal walls. Observations on several patients extending over three years indicate the uniform course of the reflex. After describing the mechanism of the reflex, the author differentiates it from the visceromotor and from the viscerosensory reflexes and classifies it with a group of reflexes for which he suggests the term cutaneous-visceral reflexes. He is convinced that the therapeutic use of this reflex can prevent for longer periods the accumulation of residual urine and thus make catheterization unnecessary.

### Munchener medizinische Wochenschrift, Munich

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- Bacterial Growth Inhibiting or Bactericidal Action of Orally Administered Iron. Schottmüller—p. 555
- Syphilis in Women. G. Gellhorn—p. 556
- Hydrogenous Ion Actions on Living Tissues by Means of Perfusion in Animal Experiments. H. Presser and R. Stahl—p. 559
- Neurologic Psychiatric Investigations on Bovers. E. Jokl and E. Guttmann—p. 560
- \*Thrombopenic Purpura Following Medication with Iodine. H. Dennig—p. 562
- Thrombopenia Following Angina. E. Jacobson—p. 562
- New Glucoside of Digitalis Latata in Circulatory Therapy. S. Dietrich and H. Schwegel—p. 563
- Conservative Therapy of Hallux Valgus. G. Jarecki—p. 566
- Definition of Term Disease. A. Krecke—p. 567
- Care and Treatment of Teeth During Childhood. G. Fischer—p. 570

Disturbances of Nasopharynx. S. Graff—p. 573

\*Vermiform Appendix in Prodromal Stage of Measles. W. H. Schultze.—p. 576

Cutaneous Changes During Suprarenal Disturbances. P. Mulzer and H. Schmalfuss.—p. 577

**Thrombopenic Purpura Following Medication with Iodine**—Of eight patients with thrombopenic purpura, observed by Dennig in the course of a year, two had previously received iodine and in a third the iodine metabolism was disturbed by the presence of exophthalmic goiter. The author calls attention to two reports in the literature concerning patients with exophthalmic goiter who developed purpura following iodine therapy. The author does not propound a theory connecting iodine medication with the onset of purpura and considering the rareness of purpura, he does not feel justified in warning against iodine therapy, but he thinks that iodine therapy should be avoided in persons who have had purpura.

**Vermiform Appendix in Prodromal Stage of Measles**—Schultze relates the clinical history of a girl aged 10, who was subjected to an appendectomy because of symptoms indicating appendicitis. The appendix showed old adhesions and the lymph nodes of the mesenterium were swollen, but there were no signs of acute appendicitis. Histologic examination revealed numerous extremely dark-stained giant cells. He recalled recent reports by Finkeldey and by Fischer showing similar changes in the appendix, when in both instances the appendix had been removed during the prodromal stage of measles. On this basis he diagnosed the case as measles, and he was told that the child had actually developed an exanthem typical for measles. Warthin and Finkeldey have observed similar giant cell formations in the tonsils during the prodromal stage of measles. Since this is the third case in which the giant cells were found in the appendix during the prodromal stage of measles, he thinks that it can be considered typical. The significance of this sign is, however, not fully understood as yet. The author considers two possibilities: the change is a direct result of the unknown virus of measles in which case the tonsils and the appendix could be considered the port of entry of the virus, or the change is due to a reaction of sensitivity. Finkeldey and Fischer incline to the latter assumption. A final decision will not be possible until it is known whether the other lymphatic tissues show similar changes or whether the changes are limited to the tonsils and the appendix. The fact that the same changes occur in the tonsils and in the appendix favors the idea of relationship of these organs.

### Zeitschrift für Krebsforschung, Berlin

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- Present Status of Six Year Old Carcinoma Strain in Vitro. A. Fischer, M. Fischer and A. Hollmann—p. 1
- \*Scar Formation of Neoplastic Cutaneous Ulcerations by Local Application of Insulin. S. F. Gomes da Costa—p. 5
- Investigations on Sarcoma Producing Virus in Mice. A. Besredka and L. Gross—p. 12
- Transplantable Mouse Sarcoma. Specific Infectious Disease. A. Besredka and L. Gross—p. 17
- Oxidocatalytic Action of Body Fluids in Cancer. L. Karczag—p. 23
- Experimental Studies on Relation of Cancer to Liver. L. Karczag, L. Nemeth and C. Sella—p. 26
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- Biologic Significance of Antilytic Factors in Serum of Cancer Patients. K. Stern and R. Willheim—p. 54
- Mitogenic Radiation of Carcinoma of Cervix Uteri. J. Klenitzky—p. 60
- Formation of Metastases Following Intravenous Injection of Carcinomatous Ascites Fluid from Mice and Rats. E. Wibeau—p. 66
- Susceptibility of Rat Testes for Flevner Jobling Carcinoma. E. Wibeau—p. 74
- Production of Rat Sarcoma by Means of Mouse Sarcoma Virus. A. Besredka and L. Gross—p. 77
- Ciliated Epithelium Cyst of Liver. W. Dullin—p. 80
- Interrelations Between Simultaneously Developing Inoculation Tumors and Internal Factors in Tumor Growth. S. Konusloff—p. 83
- Relative Specific Chemotherapy of Cancer by Disintegration Products of Tumors. R. Werner and H. Winter—p. 89

**Scar Formation of Neoplastic Ulcerations Following Local Application of Insulin**—Gomes da Costa discusses the increased reactivity of cutaneous neoplasms to roentgen rays after a preliminary local application of insulin and reports the histories of five patients in whom small neoplastic ulcerations on the outside of the nose were healed by the application of an insulin ointment of a concentration of 20 units per gram. In three of the patients the biopsy revealed a basal cell carcinoma and in two a squamous cell epithelioma.

# JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1933

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to Fellows of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No journals are available prior to 1925. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Thus most of these journals are accessible to the general practitioner.

- Acta Chirurgica Scandinavica Stockholm  
American Heart Journal St. Louis  
American Journal of Anatomy Philadelphia  
American Journal of Cancer New York  
American Journal of Clinical Pathology Baltimore  
\*American Journal of Diseases of Children A M A Chicago  
American Journal of Hygiene Baltimore  
American Journal of the Medical Sciences Philadelphia  
American Journal of Obstetrics and Gynecology St. Louis  
American Journal of Ophthalmology St. Louis  
American Journal of Orthopsychiatry Menasha Wis.  
American Journal of Pathology Boston  
American Journal of Physical Therapy Chicago  
American Journal of Physiology Baltimore  
American Journal of Psychiatry Baltimore  
American Journal of Public Health New York  
American Journal of Roentgenol. & Rad. Therapy Springfield Ill.  
American Journal of Surgery New York  
American Journal of Syphilis St. Louis  
American Journal of Tropical Medicine Baltimore  
American Review of Tuberculosis New York  
Annales de Dermatologie et de Syphillographie Paris  
Annales de Médecine Paris  
Annals of Internal Medicine Ann Arbor Mich.  
Annals of Medical History New York  
Annals of Surgery Philadelphia  
Archiv für Gynäkologie Berlin  
Archiv für Kinderheilkunde Stuttgart  
Archiv für klinische Chirurgie Berlin  
Archiv für Verdauungs Krankheiten Berlin  
\*Archives of Dermatology and Syphilology A M A Chicago  
Archives of Disease in Childhood London  
Archives d'Electricité Médicale Paris  
\*Archives of Internal Medicine A M A Chicago  
Archives des Maladies de l'Appareil Digestif Paris  
Archives des Maladies du Cœur Paris  
Archives de Médecine des Enfants Paris  
\*Archives of Neurology and Psychiatry A M A Chicago  
\*Archives of Ophthalmology A M A Chicago  
\*Archives of Otolaryngology A M A Chicago  
\*Archives of Pathology A M A Chicago  
Archives of Physical Therapy X Ray Radium Chicago  
\*Archives of Surgery A M A Chicago  
Archivio Italiano di Chirurgia Bologna  
Archivos Argentinos de Enfermedades del Aparato Digestivo Buenos Aires  
Beiträge zur Klinik der Tuberkulose Berlin  
Beiträge zur klinischen Chirurgie Berlin  
Bibliotek for Læger Copenhagen  
Brain London  
Bristol Medico-Chirurgical Journal  
British Journal of Anaesthesia Manchester  
British Journal of Children's Diseases London  
British Journal of Dermatology and Syphilis London  
British Journal of Experimental Pathology London  
British Journal of Ophthalmology London  
British Journal of Physical Medicine London  
British Journal of Radiology London  
British Journal of Surgery Bristol  
British Journal of Tuberculosis London  
British Journal of Urology London  
British Medical Journal London  
Bulletin of the Johns Hopkins Hospital Baltimore  
Bulletin of Neurological Institute of New York Baltimore  
Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris  
California and Western Medicine San Francisco  
Canadian Medical Association Journal Montreal  
Canadian Public Health Journal Toronto  
Chinese Medical Journal Shanghai  
Clinica Medica Italiana Milan  
Colorado Medicine Denver  
Delaware State Medical Journal Wilmington  
Dermatologische Wochenschrift Leipzig  
Deutsche medizinische Wochenschrift Leipzig  
Deutsche Zeitschrift für Chirurgie Berlin  
Deutsche Zeitschrift für Nervenheilkunde Berlin  
Deutsches Archiv für klinische Medizin Berlin  
Diagnostica e Tecnica di Laboratorio Naples  
Die ärztliche Praxis Vienna  
East African Medical Journal Nairobi  
Edinburgh Medical Journal  
Endocrinology Los Angeles  
Finska Läkarsällskapets Handlingar Helsingfors  
Folia Haematologica Leipzig  
Gann Japanese Journal of Cancer Research Tokyo  
Gazette Hebdomadaire des Sciences Médicales de Bordeaux  
Gazzetta degli Ospedali e delle Cliniche Milan  
Glasgow Medical Journal  
Guy's Hospital Reports London  
Gynécologie et Obstétrique Paris  
Hospitalltidende Copenhagen  
Hygiea Stockholm  
Illinois Medical Journal Chicago  
Indian Journal of Medical Research Calcutta  
Indian Medical Gazette Calcutta  
Indian Medical Research Memoirs Calcutta  
International Journal of Psycho Analysis London  
Irish Journal of Medical Science Dublin  
Jahrbuch für Kinderheilkunde Berlin  
Japanese Journal of Experimental Medicine Tokyo  
Japanese Journal of Gastroenterology Kyoto  
Japanese Journal of Obstetrics and Gynecology Kyoto  
Journal of Alabama State Medical Association Montgomery  
Journal of Allergy St. Louis  
Journal of Anatomy London  
Journal of the Arkansas Medical Society Little Rock  
Journal of Bacteriology Baltimore  
Journal of Biological Chemistry Baltimore  
Journal of Bone and Joint Surgery Boston  
Journal de Chirurgie Paris  
Journal of Clinical Investigation New York  
Journal of Comparative Neurology Philadelphia  
Journal of Comparative Psychology Baltimore  
Journal of Experimental Medicine New York  
Journal of the Florida Medical Association Jacksonville  
Journal of General Physiology Baltimore  
Journal of Hygiene London  
Journal of Immunology Baltimore  
Journal of the Indiana State Medical Association Indianapolis  
Journal of Industrial Hygiene Boston  
Journal of Infectious Diseases Chicago  
Journal of Iowa State Medical Society Des Moines  
Journal of Kansas Medical Society Topeka  
Journal of Laboratory and Clinical Medicine St. Louis  
Journal of Laryngology and Otolaryngology Edinburgh  
Journal of Medical Association of Georgia Atlanta  
Journal of Medical Society of New Jersey Orange  
Journal of Mental Science London  
Journal of Michigan State Medical Society Grand Rapids  
Journal of Missouri State Medical Association St. Louis  
Journal of Nervous and Mental Disease New York  
Journal of Neurology and Psychopathology London  
Journal of Nutrition Springfield Ill.  
Journal of Obstetrics and Gynecology of British Empire Manchester  
Journal of Oklahoma State Medical Association Muskogee  
Journal of Oriental Medicine South Manchuria  
Journal of Pathology and Bacteriology Edinburgh  
Journal of Pediatrics St. Louis  
Journal of Pharmacology and Experimental Therapeutics Baltimore  
Journal of the Philippine Islands Medical Association Manila  
Journal of Physiology London  
Journal of Preventive Medicine Chicago  
Journal of South Carolina Medical Association Greenville  
Journal of State Medicine London  
Journal of Tennessee State Medical Association Nashville  
Journal of Thoracic Surgery St. Louis  
Journal of Tropical Medicine and Hygiene London  
Journal of Urology Baltimore  
Jurnal Medicnogo Tsiklu Kiev  
Jurnal Po Rannemu Detakomu Vozrastu Moscow  
Kentucky Medical Journal Bowling Green  
Klinicheskaya Meditsina Moscow  
Klinische Wochenschrift Berlin  
Lancet London

- Laryngoscope St. Louis  
 Maine Medical Journal Portland.  
 Medical Annals of District of Columbia Washington.  
 Medical Bulletin of the Veterans Administration Washington D C  
 Medical Journal of Australia Sydney  
 Medical Journal and Record New York.  
 Medicina Argentina. Buenos Aires  
 Medicina Contemporanea Lisbon  
 Medicine Baltimore  
 Meditsinskaya Parazitologiya i Parazitarnye Bolezni Moscow  
 Medizinische Klinikk Berlin  
 Military Surgeon Washington D C  
 Minerva Medica Turin  
 Minnesota Medicine St Paul  
 Monatsschrift für Geburtshilfe und Gynäkologie Berlin  
 Monatsschrift für Kinderheilkunde Berlin  
 Münchener medizinische Wochenschrift Munich  
 Nebraska State Medical Journal Lincoln  
 Nederlandsch Tijdschrift voor Geneeskunde Haarlem  
 New England Journal of Medicine Boston  
 New Orleans Medical and Surgical Journal  
 New York State Journal of Medicine New York.  
 Norsk Magazin for Lægeridenskaben. Oslo  
 Northwest Medicine Seattle  
 Nourrisson Paris  
 Occupational Therapy and Rehabilitation Baltimore  
 Ohio State Medical Journal Columbus  
 Paris Medical  
 Pediatria Naples  
 Pennsylvania Medical Journal Harrisburg  
 Philippine Journal of Science Manila  
 Policlinico (Pract Sect Med Sect. and Surg Sect.) Rome  
 Practitioner London  
 Prensa Médica Argentina Buenos Aires  
 Presse Médicale Paris  
 Psychiatric Quarterly Albany N Y  
 Psychoanalytic Quarterly Albany N Y  
 Public Health Reports Washington D C  
 Puerto Rico Journal of Public Health & Tropical Medicine San Juan  
 Quarterly Bulletin of Health Organization of League of Nations Geneva  
 Quarterly Journal of Medicine Oxford  
 Radiology St Paul.  
 Revue de Chirurgie Paris  
 Revue Française de Gynécologie et d'Obstétrique. Paris  
 Revue Française de Pédiatrie Paris  
 Revue de Médecine Paris  
 Rhode Island Medical Journal. Providence.  
 Riforma Medica Naples  
 Rivista di Neurologia Naples  
 Schweizerische medizinische Wochenschrift. Basel.  
 South African Medical Journal Cape Town  
 Southern Medical Journal Birmingham Ala  
 Southern Surgeon Atlanta Ga  
 Southwestern Medicine. Phoenix Ariz.  
 Surgery Gynecology and Obstetrics. Chicago  
 Svenska Läkarsällskapets Handlingar Stockholm.  
 Texas State Journal of Medicine Fort Worth  
 Tubercle London  
 Ugeskrift for Læger Copenhagen  
 United States Naval Medical Bulletin Washington D C.  
 Upsala Läkareförenings Förhandlingar Uppsala  
 Virchows Archiv für pathologische Anatomie und Physiologie Berlin.  
 Virginia Medical Monthly Richmond.  
 Vrachebnoe Delo Kharkov  
 West Virginia Medical Journal Charleston  
 Western Journal of Surgery Obstetrics and Gynecology Portland Ore  
 Wiener klinische Wochenschrift Vienna  
 Wisconsin Medical Journal Madison  
 Yale Journal of Biology and Medicine New Haven Conn.  
 Zeitschrift für die gesamte experimentelle Medizin Berlin  
 Zeitschrift für Geburtshilfe und Gynäkologie Stuttgart  
 Zeitschrift für Immunitätsforschung Jena  
 Zeitschrift für Kinderheilkunde Berlin  
 Zeitschrift für klinische Medizin Berlin.  
 Zeitschrift für Krebsforschung Berlin  
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 Zeitschrift für urologische Chirurgie Berlin  
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## SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL In the Current Medical Literature Department only the articles which have been abstracted are indexed

The letters used to explain in which department the matter indexed appears are as follows 'BI' Bureau of Investigation, 'E,' Editorial, 'C,' Correspondence, 'ME,' Medical Economics, 'ab' abstract, the star (\*) indicates an original article in THE JOURNAL

This is a subject index and one should, therefore, look for the subject word, with the following exceptions "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S" State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states Matter pertaining to the Association is indexed under 'American Medical Association.' The name of the author, in brackets, follows the subject entry

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*Am.—American* *Med—Medicine*  
*A—Association* *Nat—National*  
*Coll—College* *Phar—Pharmaceutical*  
*Conf—Conference* *Phys—Physicians*  
*Cong—Congress* *Rev—Revision*  
*Conv—Convention* *Ry—Railway*  
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